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ORNITHOLOGICAL RESULTS OF THE CANADIAN 'NEPTUNE' EXPEDITION TO HUDSON BAY AND NORTHWARD. 1903-1904.

BY REV. C. W. G. EIFRIG.

IN the summer of 1903 an expedition was sent out by the Canadian Government to Hudson Bay and northward for the purpose of taking formal possession of certain lands and islands, which for many years had been understood by everyone to belong to Great Britain or Canada, but which in some cases had never been formally claimed as such. The purpose of the expedition was also to establish custom and police relations with some of the whaling stations in the far north, make surveys, etc. The good sealing steamer 'Neptune,' chartered by the government, carried, beside its complement of men and officers, Mr. A. P. Low, in charge of the expedition, several members of the Geological Survey of Canada, Mr. A. Halkett, the naturalist, and an officer and five men of the Northwestern Mounted Police. They left Halifax harbor August 23, 1903, and entered it again October 11, 1904, being thus absent one year and fifty-one days. As such expeditions are not made very frequently and not many ornithologists reach the places visited by this one, it may not be amiss to make the ornithological results obtained more widely known than can be done by the usual government report. The writer, therefore, with the kind permission and aid of Messrs. A. P. Low and A. Halkett, carefully went over the material brought back and took copious notes of it and from the journals of these gentlemen.

The route followed was roughly as follows: From Halifax along the coast of Labrador to Port Burwell, near Cape Chidley, the northeasternmost point of Labrador; from there, with many deviations right and left to some whaling stations, across the northern part of Ungava Bay and westward to Charles Island and Cape Wolstenholme into Evans Strait; south of Southampton Island to Cape Fullerton, at the entrance of Chesterfield Inlet in the north-western corner of Hudson Bay. Here they remained in winter quarters from October, 1903, to July 18, 1904, at which date the ice broke up sufficiently to admit of their passage out. During this long stay excursions were made inland to the west, northward to Hayes River, and many to Southampton Island. They then sailed out of Hudson Bay over approximately the same route as inward, then from Cape Chidley north to Frobisher Bay, Cumberland Sound, then across Davis Strait to Greenland, and along its coast to latitude $78^{\circ} 40'$. They landed at Ellsmere Land and North Devon Island and went quite a distance west into Lancaster Sound, and into Pond's Inlet, along the coast of Baffin Land; then again eastward on account of the ice, once more into Cumberland Sound, Port Burwell, Kikkerton, Blacklead, etc., and back to Halifax.

The following is a list of the ornithological material brought back and some of the notes furnished me by Messrs. A. P. Low and A. Halkett.

1. *Gavia arctica*. BLACK-THROATED LOON.—Four skins, one male, June 17, 1904, and two females, July 16, 1904, at Cape Fullerton, and one from Southampton Island. One full set of 2 eggs, Southampton Island, July 5, 1904. The eggs are dark chocolate, glossy, with a few and small umber spots; size 3.10×2 in., and 3.10×2.03 in. Common in the northern part of Hudson Bay, but not seen much elsewhere; not seen in winter. Breeds abundantly on Southampton Island in the manner of the common Loon. Stomach contents: stones and fragments of shells, but no fish bones.

2. *Gavia lumme*. RED-THROATED LOON.—Three skins from Cape Fullerton, a male June 17, and 2 females July 16, 1904. One egg, from Cape Chidley, is elongated, dark olive with numerous inconspicuous umber spots or dots. The full set is also two eggs. Size 2.85×1.70 . This species is not quite as common as the preceding, still it is not uncommon in the same places. In Labrador it nests on grass tussocks along the ponds or on little islands in them. It can fly directly from the water (A. P. L.), which the preceding species cannot do so easily. Stomach contents: fish bones and stones.

3. *Cepphus mandtii*. MANDT'S GUILLEMOT.—Eight skins, 6 in adult summer plumage, 2 immature, taken June 16, July 16 and 17, 1904, at Cape Fullerton, where they are common summer and winter, as also throughout Hudson Bay and northward; some were seen at North Devon. Although feeding on crustaceans and small fishes they are used as food by both Eskimos and white people. They nest in cavities under rocks and boulders, one, two, or very seldom three eggs being the full set. They nest late, none of the 12 eggs collected being taken before July 10. The ground color of the eggs is greenish white to chalky white, with large and small spots and blotches of black, umber and lilac, most numerous and largest at the larger end.

4. *Uria lomvia*. BRÜNNICH'S MURRE.—Three skins from Cape Wolsenhof, Hudson Strait, where there is a large rookery. Male and two females, July 21, 1904. They were sitting on the ice cakes of a large ice jam. All through Hudson Strait they were numerous, often flying about the ship. They are common at North Devon and other arctic islands, also on the coast of Greenland.

5. *Alle alle*. DOVEKIE.—This species was observed to be common from Frobisher Bay northward, where it nests in the cliffs on the coast of Baffin Land, Hall Island, and North Greenland. Two eggs were collected on the Cary Islands near Cape Parry, North Greenland. It deposits its single egg, like the Guillemots, in crevices. The eggs are very pale green, one unmarked, the other sprinkled with minute brown dots.

6. *Stercorarius parasiticus*. PARASITIC JAEGER.—Two skins were brought from Cape Fullerton, where the birds were not uncommon. The Arctic Tern (*Sterna paradisæa*) suffers most from its depredations. Two eggs were collected in Southampton Island; the ground color is dull olive-grayish with dark and pale umber-vinaceous spots and blotches, also some lines. Size, 2.40×1.90 . The stomach contents of this and the next species were bones and feathers, which seems to indicate that they may occasionally act as true birds of prey. This species was more common than the next.

7. *Stercorarius longicaudus*. LONG-TAILED JAEGER.—Three specimens, in the light phase of plumage, were collected at Fullerton (date ?). To this species probably belong two Jaeger eggs obtained at Cape Chidley on the outward trip, September, 1903, from Eskimos. They are of the same color and appearance as the preceding, but the markings are more obscure, and they are smaller, measuring 1.80×1.30 and 1.70×1.45 .

8. *Pagophila alba*. IVORY GULL.—A beautiful young bird was taken at Fullerton, Sept. 22, 1904. The primaries are all tipped with black and there are many partly hidden black spots on the greater and lesser wing-coverts, and above the under edge of the wing, which form a pleasing contrast to the otherwise immaculate white, soft plumage. The gizzard contained oily and hairy substances, also what was apparently an onion, gotten no doubt from refuse thrown from some whaler, which they like to follow up.

9. *Rissa tridactyla*. KITTIWAKE. — Met with, but not common.
10. *Larus glaucus*. GLAUCOUS GULL; BURGOMASTER. — An immature specimen was taken Sept. 11, 1904, in Ungava, Labrador. It is in the typical plumage of birds of the year. It had fish bones and surface amphipods in its stomach. Not common.
11. *Larus marinus*. GREAT BLACK-BACKED GULL. — Found to be not rare on the Labrador coast, and common at North Devon. They live on fish, but on account of their size are not subject to the attacks of Jägers. Ten eggs from different nests were collected; ground color, grayish white, greenish or even brown, while the spots and blotches are umber, yellowish brown and pale lilac. Size of three: 3×2.05 ; 3.10×2.15 ; 2.85×2 .
12. *Larus argentatus*. HERRING GULL. — Three adult specimens were taken at Cape Fullerton May 29 and June 10 and 15. They had broken shells, seeds, berries, and one a crab, in the stomach. Common in Hudson Bay and Strait but not common further north.
13. *Xema sabinii*. SABINE'S GULL. — This gull was common on Southampton and other islands, breeding there along the shores and the banks of small ponds in company with the Arctic Tern. They make no nest but deposit their eggs in the sand. Two eggs were taken at Southampton, June 28, 1904; ground color of one, dull pale greenish, the other, grayish greenish white, with brown and pale lilac spots and much blotching of brown and blackish at the large end. These birds were very inquisitive and not at all shy at Southampton.
14. *Sterna hirundo*. COMMON TERN. — Seen in some parts only of Hudson Bay. Not as plentiful as next species.
15. *Sterna paradisæa*. ARCTIC TERN. — One female was taken June 16, 1904, at Fullerton and two more on Southampton Island. This was the most common tern seen from the northern parts of Hudson Bay to the far north. They nest along the shores, placing their eggs, without nesting material, on the sand or gravel. Thirty-six eggs were brought along, which unfortunately were not kept in their original sets, since the Esquimos which lived about the ship would bring some. The ground color varies much, from light grayish brown, olive or pale greenish to darker shades of the same colors. Some have small, others large spots and blotches of umber, pale lilac, etc. Sizes of five: 1.45×1.10 ; 1.65×1.20 ; 1.55×1.10 ; 1.60×1.20 ; 1.75×1.15 . Several were collected at Fullerton, June 28, 1904, others at Cape Chidley, Labrador, in June, 1903.
16. *Fulmarus glacialis*. FULMAR; 'NODDY.' — One taken Aug. 19, 1904, at Eclipse Bay, Pond's Inlet, in the far north. Numbers of them could be seen around the sterns of whaling vessels.
17. *Harelda hyemalis*. OLD SQUAW. — Three skins taken June 16 (♂ and ♀) and June 22 (♂) at Cape Fullerton. These were very dark, upper parts and breast nearly all black; some rusty brown on back, neck and scapulars. They were very abundant and noisy at Fullerton and Southampton. They nest around ponds; the nests are made of grasses,

lined with feathers. One set of 7 eggs was taken June 30, 1904; color pale bluish olive; measurements, 2.25×1.50 ; 2.15×1.45 ; 2.20×1.45 . Another set of 8 eggs, was taken June 27, 1904, also at Fullerton, which were much paler in color; sizes: 2.05×1.50 ; 2.10×1.45 ; 2.35×1.55 .

18. *Somateria mollissima borealis*. GREENLAND EIDER.—This fine duck was found to be common around Fullerton and in all the region to North Devon. Some remained in the open water all winter and were frequently shot for food. The head of one of these, thrown out by the cook, was by chance put into formalin by Mr. Halkett, and this shows a curious anomaly in color, inasmuch as the areas around the bill are black, which Mr. H. thinks is not caused by the preservative. The skins show the regular coloring. A young one, still in its downy stage, was taken at Cumming Creek, North Devon Island, Aug. 13, 1904. The entire upper parts are fuscous, the under parts light mouse color. This species breeds on rocky islands, placing its nest on sandbars, in grass between rocks, or in any available place near the shore. One set of 9 eggs was taken on Southampton Island, July 17, 1904; color, pale olive to greenish gray; sizes: 2.75×2 ; 3.20×2.10 ; 2.90×1.95 . A single egg was also picked up on the beach of Charles Island, Sept. 3, 1904. Two incomplete sets of 4 eggs each were taken at Fullerton, July 17, 1904.

19. *Somateria spectabilis*. KING EIDER.—Not as common as the preceding. Four skins, taken June 16 and 26 at Fullerton and Southampton. It is much less timid than the preceding species, allowing close approach. It does not remain in winter at Fullerton and breeds in different localities from those of *S. mollissima borealis*. It places its soft, down-lined nest on tussocks of grass along the shores and on islands of inland ponds. It was common on Southampton Island where the other was scarce. A set of 4 eggs was taken at this place, June 28, 1904. Color, pale olive gray; size, 2.50×1.75 . The stomach contents were fragments of mollusks, stones and sand.

20. *Chen hyperborea*. LESSER SNOW GOOSE.—This species, called Wavy by the whalers, is rather common on Southampton Island and Baffin Land. Two males were taken June 4 and 7 respectively. On the former date a flock of twenty-two was seen, the first two of which seemed to be Blue Geese (*Chen caerulescens*). Stomach contents: vegetable matter and stones. They breed mostly on islands along the eastern shores of Hudson Bay, and more abundantly to the northward. Their nests are found in wet ground and are made of grass, moss, etc., with down on top, the whole 6-8 inches high. A set of 7 eggs was taken on Southampton Island June 22, 1904. They are creamy white, much like eggs of the common hen; sizes: 3.25×2.10 ; 3.25×2.05 .

21. *Branta canadensis*. CANADA GOOSE.—Found common at Labrador; not met with further north.

22. *Branta c. hutchinsii*. HUTCHIN'S GOOSE.—A typical specimen was taken June 17, 1904, in the vicinity of Cape Fullerton. Length, 27 in.; wing, 17.50; bill, 1.75. The line of demarcation between the black and white areas on the head is a *straight* slanting line.

23. *Branta c. minima*. CACKLING GOOSE.—There is a skin in the collection which to all appearances belongs here. It was identified as this form also by Mr. E. White, who is familiar with this subspecies from the Pacific coast. It is much smaller than the preceding; the black area on the head is rounded out below the eyes, not forming a straight line, and the depression at the end of the bill is more pronounced. Length, 24; wing, 15.50; bill, 1.25. Both species were rare at Fullerton and Southampton.

24. *Branta bernicla*. BRANT.—A few breed around Cape Fullerton. Not common.

25. *Olor columbianus*. WHISTLING SWAN.—Two were taken on Southampton Island, where it was common, as also in the flat land north of Repulse Bay. They breed in low lands with lakes, where their nests, constructed of seaweed, grass and moss, are very conspicuous. They are very bulky affairs, about 3 feet in diameter at the base tapering to 18 inches at the top, and 18 inches high. A set of 2 eggs was taken on Southampton, July 4, 1904. They are ivory color, unspotted, one end as large as the other; sizes: 4×2.55 ; 3.50×2.45 . It may be interesting to ornithologists who make their own bird skins to hear, that the fat of all these fatty skins was removed by the Eskimos, who *bite* it off. And they do it cleanly and thoroughly. Tastes differ!

26. *Grus canadensis*. LITTLE BROWN CRANE.—A bird of the year was taken in Southampton in July, 1904. No more were seen.

27. *Crymophilus fulicarius*. RED PHALAROPE.—This was very common around Fullerton and Southampton. The skins of five adult and two immature specimens were brought back, taken at the above place in June and July, 1904. They nest around fresh water ponds, laying their eggs, without nesting material, in depressions in the sand or moss, often in lichens. A set of 4 eggs was collected July 2, 1904, at Southampton. They are very acutely tapering; ground color light brown, with large chocolate blotchings. A single egg, taken June 26, had a greenish tint in the ground color.

28. *Actodromas fuscicollis*. WHITE-RUMPED SANDPIPER.—Three adults of this species were taken at Cape Fullerton May 22 and June 16, 1904. Not very common.

Nine sets of sandpiper eggs were brought back, but the owners of most of these were not identified. While it might be possible to identify them by comparing them with sets of known identity and with descriptions and measurements, it would not be satisfactory owing to the great variability in the eggs of the different species, and the little knowledge we have of them in some cases. The first one of these sets was collected June 23 and the last July 4.

29. *Actodromas minutilla*. LEAST SANDPIPER.—This and the Semipalmated were the most common sandpipers in the region. A set of eggs was taken July 4 at Fullerton. The four eggs are, like all these sandpiper eggs, pyriform; the ground color of two is whitish, of the other

two pale brown, with many dark brown, umber, black, and pale lilac markings.

30. *Pelidna alpina sakhalina*. RED-BACKED SANDPIPER.—One adult was taken in July, 1904, at Southampton. Not common.

31. *Ereunetes pusillus*. SEMIPALMATED SANDPIPER.—Very common, as are also their nests. A set of 2 eggs, which Mr. Low thinks is referable to this species, has the ground color whitish, with an almost imperceptible bluish tinge, heavily dotted, blotched and washed with umber, brown, and faint lilac. Spots larger at the larger end; size: $1.25 \times .85$.

32. *Calidris arenaria*. SANDERLING.—Common; one taken at Fullerton June 16, 1904.

33. *Numenius hudsonicus*. HUDSONIAN CURLEW.—Mr. Low says Curlew are not uncommon on Southampton and breed there. I suppose that would mean this species. None were taken.

34. *Squatarola squatarola*. BLACK-BELLIED PLOVER.—A female was taken at Fullerton in June, 1904. They were not common.

35. *Charadrius dominicus*. GOLDEN PLOVER.—Not rare; some breed on Whale Point.

36. *Ægialitis semipalmata*. SEMIPALMATED PLOVER; RINGNECK.—Common. Their eggs are laid on the sand or gravel of the beaches, no attempt being made at nest building. One set of 4 eggs was taken at Whale Point, near Fullerton, July 1. They are large for the bird, light brown with a slight green tinge and numerous roundish blackish umber and lilac spots and dots. Another set of 3 eggs was taken at Fullerton, June 28.

37. *Arenaria interpres*. TURNSTONE.—Two adults in fine plumage were taken in July, 1904, at Southampton. Rather scarce.

38. *Lagopus rupestris*. ROCK PTARMIGAN.—Fairly common as far north as the willow, dwarfed at last to a height of only six inches, is met with. They build their nest of grasses, etc., lined with finer grass and some of their own feathers. The usual complement is 8-10 eggs. Five eggs of this species were taken at Cape Chidley, Labrador. They were creamy-buff, heavily dotted, spotted, and blotched with blackish umber; size of 2: 1.55×1.15 ; of 3: 1.70×1.20 .

39. *Archibuteo lagopus sancti-johannis*. AMERICAN ROUGH-LEGGED HAWK.—Common at Labrador, where it nests on the *top* of cliffs, not on the side, like the Duck Hawk. The nest is rudely built of sticks. Ten eggs were obtained from Eskimos at Cape Chidley.

40. *Falco islandus*. WHITE GYRFALCON.

41. *Falco rusticolus obsoletus*. BLACK GYRFALCON.—These two species are reported by Mr. Low as common near Cape Chidley and over the whole of Ungava, where they also breed in numbers. Mr. Low has frequently been in Labrador.

42. *Falco peregrinus anatum*. DUCK HAWK.—An immature bird was taken at Fullerton, June 27, 1904. At Cape Chidley and in Labrador generally it is more common, nesting on the *sides* of cliffs, in almost

inaccessible places. Two eggs were obtained at Cape Chidley. They are bright reddish brown, covered so profusely with markings of the same color, only darker, as to almost hide the ground color. Size, 2.10×1.55 .

43. *Nyctea nyctea*. SNOWY OWL.—This species is said by the Eskimos, who are quite shrewd observers, to breed inland from Cape Fullerton.

44. *Otocoris alpestris*. SHORE LARK.—Three male specimens were taken at Fullerton May 25 and 26, 1904. They were not common there; a few could be seen walking around among the Snowbirds. Much more common at Cape Chidley, from where a nest with four eggs was brought. The nest, placed on the ground, partly sunk in moss, is made of moss, plant stems, grasses, finer toward the cup; this is lined with feathers and caribou hair. The outside diameter is 5 in., of cup, 2 in., depth of cup, 1.75-2 in., outside depth, 2-2.50 in. The eggs are of a dull olive whitish ground color, almost covered by innumerable small spots of brownish lilac.

45. *Corvus corax principalis*. NORTHERN RAVEN.—A fine specimen was shot at Eric Cove, Ungava, Sept. 13, 1903. Several were seen at Cape Fullerton throughout the winter. Five were seen flying in single file at Port Burwell. No doubt they are conspicuous in that endless waste of white in winter.

46. *Acanthis linaria*. REDPOLL.—One was taken April 26, 1904, at Fullerton, where it was rarely seen. This is not to be wondered at, when we hear that the largest thing in the line of trees or bushes to be found there are stunted willows, six inches high.

47. *Acanthis linaria rostrata*. GREATER REDPOLL.—A specimen of what seems to be this species was taken on the vessel off the Labrador coast, Sept. 4, 1903.

48. *Passerina nivalis*. SNOWFLAKE.—This was the most abundant bird in all places visited by the expedition, it equalling in numbers all the other birds combined. It was found breeding at all places touched, as far north as $78^{\circ} 30'$. Therefore there was more material brought back of this species than of any other, namely 17 skins and 18 sets of eggs, 7 of which are in their original nests. According to Mr. Halkett the first ones arrived at Fullerton in the season of 1904 about April 7, fresh flocks coming every day after that until after April 20, when they seemed to be all there that cared to stay. About the middle of September they commenced leaving Cape Fullerton and after the 26th of that month no more were seen by him. The skins are of birds taken from April 23 to June 11. Accordingly there is a great variation in the coloring, from the rusty looking individuals which we see further south to the pure white and black of the highest breeding plumage. A female taken May 25 has the feathers of the head black at the base, brownish and grayish at the end; back similar but with some feathers bright rusty. A male, May 29, has upper half of wings pure white, a female, June 11, is blackish fuscous all over.

Although they arrived at Fullerton the middle of April, they did not commence to nest until the end of June. The first and incomplete sets were taken June 30, containing 4 eggs; July 1, two of 3 and one of 4 eggs were taken; July 2, one of 6, July 3 one of 7 and one of 3; July 5 one of 3; July 6 one of 4; from Cape Chidley come two of 7 eggs collected by Eskimos in July, 1903; sets of 4, 5, and 6 eggs each have no date. So the full set seems to vary from 3 or 4 to 7 eggs. There is great variation also in the color and markings of the eggs of different sets. One set has the color pale bluish, much washed with light brownish, with a few conspicuous blackish dots; another is faint bluish white with pale lilac markings, heavily dotted with umber, mostly at the larger end, size $.85 \times .65$; another is darker bluish green, with many minute brown and lilac spots and a few large umber dots at the larger end; some are almost white; some again more elongated in shape than others, one set measuring $.85 \times .55$ in.

All the nests found were not placed in the open, as stated in most books, but below rocks and boulders. In a typical nest the material consists of grasses, old feathers and plant pappus, lined with the last and feathers of larger birds. Some have a lining of caribou hair and the outside rim of moss and lichens. The dimensions are: diameter outside, 6.50 in., inside 2.75 in., height 2.25 in., depth of cup, 1.25-1.50 in.

The stomach contents were small seeds, sand, and vegetable matter.

49. *Calcarius lapponicus*. LAPLAND LONGSPUR. — This species began to arrive at Fullerton about May 26, and was thereafter seen in the company of Snowflakes and Shore Larks. Ten skins were brought home, taken from May 26 to June 16, and one taken on board the vessel Sept. 4, 1903. These skins are far prettier than those of birds taken further south during migration, the blacks being deep and velvety, the chestnut collar bright and glowing. They were not as abundant as the Snowflakes, nor were any seen at Fullerton when the ship reached there at the end of September, 1903.

The first eggs are laid about July 1. The nests are placed in grass in the open, especially on the side of banks of fresh water ponds. Two sets of eggs, one of four, the other of six, were collected, both taken July 1. The size is $.80 \times .62$. They are dull olive or brown, with many streaks, marks and washes of darker brown or vinaceous. The nest is of coarser make than that of the Snowflake, the walls are also thinner. It is made of grass, the cup, lined with fine grasses and feathers, is large for the bird. Outside diameter 3.50 in., of cup 2.50 in., depth of cup, 2.50 in.

50. *Setophaga ruticilla*. REDSTART. — A poor skin of one was shown to Mr. Halkett at Port Burwell by the factor of the station, showing that this species occasionally reaches the north of Labrador.

51. *Anthus pensilvanicus*. AMERICAN PIPIT. — Not rare at most places visited. The nest is placed on the ground in grass.

THE FORMS OF *VERMIVORA CELATA* (SAY).

BY HARRY C. OBERHOLSER.

THREE forms of the North American warbler, *Vermivora*¹ (= *Helminthophila*) *celata* (Say), are at present commonly recognized. An examination of the pertinent material in the Biological Survey of the Department of Agriculture and in the United States National Museum, some 280 specimens in all, shows conclusively that an additional race should be defined, and that the ranges, as well as, to slight extent, also the characters of the already known forms readjusted. This is attempted in the succeeding paragraphs.

Vermivora celata celata (Say).

Sylvia celatus SAY, Long's Exped. Rocky Mts., I, 1823, p. 169.

Helminthophaga celata var. *obscura* RIDGWAY, in Baird, Brewer and Ridgway, Hist. North Am. Birds, Land Birds, I, 1874, p. 192, pl. xi, fig. 6 (Georgia and Florida).

Chars. subsp.—Of medium size; palest and most grayish of all the forms of the species.

Type locality.—Engineer Cantonment, Council Bluffs, Iowa.

Geographical distribution.—Alaska, excepting the coast region from Cook Inlet southward; Canadian territories of Yukon, Mackenzie, Athabasca, and central Keewatin; in migration south to Washington, Arizona, Texas, Florida, South Carolina, New England, and eastern Mexico to the state of Hidalgo.

Specimens from the neighborhood of the western base of the Alaska Peninsula are quite typical *celata*, though of rather large size; the only example from Kadiak, an adult male in perfect plumage, taken June 7, 1893, is of maximum *celata* dimensions, and is much too grayish for *lutescens* or even the Rocky Mountain race. This form of the species is, like all the others, noticeably more grayish in fall and winter than in summer. The bird described as *Helminthophaga celata* var. *obscura* by Mr. Ridgway²

¹ For the use of this generic name, cf. Oberholser, *Smithson. Quart.*, III, 1905, p. 66.

² Baird, Brewer, and Ridgway, *Hist. North Am. Birds, Land Birds*, I, 1874 p. 192, pl. xi, fig. 6.

was based on adventitiously soiled winter individuals of typical *celata*.

True *celata* has been detected from the following localities, breeding records being indicated by an asterisk:

Alaska: — Circle*; Yukon River, 20 miles above Circle*; Mountains near Eagle*; Yukon River at Alaska-Canada Boundary*; Fort Yukon*; St. Michael*; Mouth of Porcupine River*; Nushagak*; Lake Clark*; Port Heiden*; Lake Aleknagik*; Kadiak Island*; Lake Iliamna*.

Alberta: — Edmonton.

Assiniboia: — Medicine Hat; Indian Head.

Athabasca: — Fort Chippewyan*; Smith Landing*.

Keewatin: — York Factory*.

Mackenzie: — Fort Resolution*; Fort Rae*; Fort Simpson*.

Manitoba: — Carberry.

Yukon: — Caribou Crossing, Yukon River*.

Arizona: — Fort Huachuca.

Florida: — Gainesville; Newman's Lake, Alachua County; Fort Bas-singer; Enterprise.

Georgia: — Atlanta.

Illinois: — Mt. Carmel.

Montana: — Fort Keogh.

North Dakota: — Souris River.

South Carolina: — Mount Pleasant; Port Royal.

Texas: — Fort Clark; San Antonio; Laredo; Sycamore Creek.

Washington: — Neah Bay.

Wisconsin: — Dane County.

Hidalgo: — Pachuca.

Nuevo Leon: — Monterey.

Tamaulipas: — Camargo; Matamoras; Soto la Marina; Charco Escondido.

Vermivora celata oresteria, subsp. nov.

Chars. subsp. — Similar to *Vermivora celata celata*, but larger and much more yellowish, both above and below.

Description. — Type, adult male, No. 186782, U. S. N. M., Biological Survey Collection; Willis, New Mexico, July 16, 1903; V. Bailey. Upper parts yellowish olive green, brighter on the rump and upper tail-coverts, the crown with a partially concealed orange rufous patch; wings and tail fuscous, edged with yellowish olive; sides of head and neck yellowish olive, somewhat lighter than the back; a rather ill-defined yellow super-ciliary stripe; under surface yellow, washed with olive, most heavily so on breast and sides.

Geographical distribution.—Mountains of New Mexico, Arizona, and southeastern California, to British Columbia; in migration east to Minnesota and Pennsylvania, south to Texas, and Mexico to Lower California, Michoacan, Guerrero, and Puebla.

This new form has usually been included with *V. celata celata*, but breeding specimens recently obtained, principally from New Mexico and British Columbia, indicate its much closer relationship, in all respects except size, with the west coast forms. From *Vermivora celata lutescens* it may, however, readily be distinguished by its duller, less yellowish color, both above and below, and by its much greater size.

Specimens of this form are in hand from the subjoined localities:

Alberta:—Canmore; Banff; Edmonton.

British Columbia:—Penticton.*

Arizona:—Mount Graham*; San Francisco Mt.; San Pedro River, Mexican Boundary Line; Adonde; Tucson; Fort Huachuca; seven miles north of Bisbee.

California:—Argus Range; Panamint Mts.*; Olanche Peak.

Colorado:—Denver.

Minnesota:—Fort Snelling.

Montana:—Columbia Falls; Fort Keogh; Dry Creek, Gallatin County; Jefferson River, Gallatin County.

Nevada:—Ruby Mts.*; Humboldt Valley; Upper Humboldt Valley.

New Mexico:—Willis*; Rinconada; Stinking Spring Lake; Guadalupe Cañon, Mexican Boundary Line; Taos Mts.; Fort Defiance; Big Hatchet Mts.; Arroyo Hondo*; Santa Rosa; Culebra Mt.*; Twining*; Capitan Mts.*; Corner Monument No. 40 (100 miles west of El Paso), Mexican Boundary Line.

Pennsylvania:—Williamsport.

Texas:—Guadalupe Mts.; Fort Clark; San Antonio; Benbrook; Paint Rock.

Utah:—Parley's Park, Wasatch Mts.*

Wyoming:—Fort Bridger*; Bridgers Pass.

Chihuahua:—Chihuahua.

Guanajuato:—Guanajuato.

Guerrero:—Mountains near Chilpancingo.

Hidalgo:—El Chico.

Jalisco:—San Sebastian.

Lower California:—La Paz; Gardiners Lagoon, Salton River.

Michoacan:—Patamban.

Morelos:—Huitzilac; Tetela del Volcan.

Nuevo Leon:—Rodriguez; Monterey.

Puebla:—Orizaba; Huachinango.

San Luis Potosi:—Soledad; San Luis Potosi.

Tamaulipas:—Matamoras.

***Vermivora celata sordida* (Townsend).**

Helminthophila celata sordida TOWNSEND, Proc. U. S. Nat. Mus., XIII, 1890, p. 139.

Chars. subsp.—Similar to *Vermivora celata orestera*, but wing shorter; bill longer; upper and lower parts darker and duller.

Type locality.—San Clemente Island, California.

Geographical distribution.—Santa Barbara Islands, California; occasional on adjacent mainland.

Specimens have been examined from the following localities:

California:—Santa Catalina Island; Santa Cruz Island; Santa Rosa Island; San Clemente Island; Pasadena.

***Vermivora celata lutescens* (Ridgway).**

Helminthophaga celata var. *lutescens* RIDGWAY, Amer. Journ. Sci. and Arts, 3rd Ser., IV, Dec. 1872, p. 457.

Chars. subsp.—Similar to *Vermivora celata sordida*, but smaller, and lighter colored, the yellow of lower parts brighter, the olive green of upper surface more yellowish.

Type locality.—Fort Kenai, Alaska.

Geographical distribution.—Pacific coast region, from Cook Inlet, Alaska, to Los Angeles County, California, east to the Sierra Nevada and Cascade Mountains; in winter east to Nevada and Arizona, and south through western Mexico to Guatemala.

Birds from the northern Sierra Nevada (Lake Tahoe to Mount Lassen) are somewhat intermediate between *V. c. lutescens* and *V. c. orestera*, but appear to be nearer the former. In the original description of this race¹ the range is said to be "Pacific coast from Kadiak to Cape St. Lucas," and Mr. Ridgway has recently given² the type locality as Kadiak Island; but the Kadiak bird is, as already noted, almost typical *celata*; while the type locality is really Fort Kenai, Alaska, as proved by the type specimen, an

¹ Am. Journ. Sci. and Arts, 3rd. Ser., IV, Dec. 1872, p. 457.

² Birds N. and Mid. Amer., II, 1902, p. 467.

adult male collected by Bischoff, which still bears its original label with the statement that it is the type.

Examples of this race have been seen from the localities given below :

Alaska :—Kasaan Bay, Prince of Wales Island* ; Sitka* ; Yakutat* ; Haines* ; Fort Kenai* ; Gustavus Point* ; Mitkof Island* ; Wrangell* ; Virgin Bay* ; Glacier Bay.*

Arizona :—Fort Huachuca ; Tinajas Altas, Mexican Boundary Line ; Pinal County.

British Columbia :—Port Simpson* ; Cumshewa Inlet, Queen Charlotte Islands* ; Victoria* ; New Westminster ; Burrard Inlet* ; Wellington* ; Port Moody* ; Lund, Melaspina Inlet*.

California :—San Francisco* ; Rio Dell* ; Calaveras County* ; Lassen Peak* ; Donner* ; Mount Shasta* ; Tejon Valley ; Weaverville* ; Riverside ; Mono Lake ; South Fork of Merced River* ; Soda Springs* ; Los Gatos* ; Fort Jones* ; Oakland ; Haywards ; Baird* ; Yuba County.

Nevada :—East Humboldt Mts. ; Humboldt Valley.

Oregon :—Sodaville ; Columbia River ; Fort Klamath ; Diamond Lake* ; Beaverton ; Maury Mts.* ; Fort Umpqua* ; Seaside* ; Portland* ; Des Chutes River.

Washington :—Neah Bay* ; Mt. St. Helens* ; Chiloweyuck Depot* ; Fort Steilacoom ; Lapush* ; Suez*.

Colima :—Manzanillo.

Lower California :—La Paz ; Cape St. Lucas ; Sierra San Gertrude.

Sinaloa :—Mazatlan.

Millimeter measurements of males of the four forms of *Vermivora celata* may be compared from the following table :

Vermivora celata celata.

Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
Circle, Alaska	July 16	59.5	48.5	9.	18.	10.5
Fort Resolution, Mackenzie .	June 22	59.5	47.	10.	16.5	11.
" " " " " "	" "	61.5	47.5	9.5	18.5	11.
York Factory, Keewatin . . .	July 16	60.	48.	10.	17.5	9.5
Fort Chippewyan, Athabasca	June 1	61.5	50.	9.	17.	10.5
Smith Landing, Athabasca . .	June 11	61.	48.5	10.	17.5	10.5
Carberry, Manitoba	May 14	62.5	50.5	9.5	18.	11.
Mt. Carmel, Illinois	Apr. —	63.	49.5	10.	18.	11.
Gainesville, Florida	Feb. 1	64.	53.	11.	18.5	11.5
Fort Clark, Texas	Mar. 22	61.	49.	10.	17.	10.5
Average		61.4	49.2	9.8	17.7	10.7

Vermivora celata orestera.

Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
Willis, New Mexico . . .	July 16	63.	51.	10.5	18.5	11.
" " " . . .	Aug. 19	63.5	51.5	10.	18.	10.
Rinconada, New Mexico . . .	Apr. 28	64.	50.5	10.5	17.5	11.
" " " . . .	May 3	66.	53.	10.	18.	10.5
Stinking Spring Lake, N. M.	Oct. 2	61.5	49.5	11.	17.5	10.
Argus Range, Calif. . . .	May 9	62.	48.5	10.	18.5	10.
" " " . . .	"	64.	50.	10.	18.5	10.
Columbia Falls, Mont. . . .	May 4	64.	50.	10.	19.	10.5
Ruby Mts., Nevada . . .	June 20	63.5	49.5	10.	19.5	10.5
Guadalupe Mts., Texas . . .	Aug. 24	62.	50.	10.	18.	10.5
Average 10		63.4	50.4	10.2	18.3	10.4

Vermivora celata sordida.

Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
Santa Catalina I., Calif. . .	Apr. 23	60.5	50.	11.5	18.5	11.
" " " . . .	" 11	62.	51.5	10.5	18.5	10.
" " " . . .	" 20	60.	51.5	11.	18.5	11.
" " " . . .	" 12	61.	52.5	11.5	18.5	10.5
" " " . . .	" 21	59.5	48.5	11.	18.5	10.5
" " " . . .	" 25	62.	51.5	12.5	19.	12.
" " " . . .	" 22	62.	52.	11.	18.	10.5
" " " . . .	" 22	60.	47.5	11.	19.	11.
Santa Cruz I., Calif. . . .	Feb. 7	60.5	52.	11.5	19.	11.
Santa Rosa I., Calif. . . .	Jan. 7	59.	49.5	11.	19.	11.
Average 10		60.7	50.7	11.3	18.7	10.9

Vermivora celata lutescens.

Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
San Francisco, Calif. . . .	May 3	60.5	47.	9.5	18.	11.
Sodaville, Oregon	May 21	57.	44.	9.5	17.5	10.5
Neah Bay, Washington . . .	May 18	61.	48.	10.	16.	11.
" " " . . .	June 4	60.	48.	10.	17.5	11.
Fort Simpson, Brit. Col. . .	Aug. 13	61.	47.	9.	18.	11.
Queen Charlotte Is., Brit. Col.	June 15	60.5	49.5	10.5	17.	10.5
Prince of Wales I., Alaska .	May 19	59.5	46.	10.5	18.	10.5
Sitka, Alaska	July 31	58.5	47.5	10.	18.	11.
Yakutat, Alaska	June 19	59.	45.	10.	17.5	10.5
Haines, Alaska	June 1	59.	47.	10.	18.	12.
Average 10		59.6	46.9	9.9	17.6	10.9

WILLIAM SWAINSON TO JOHN JAMES AUDUBON.

(Hitherto Unpublished Letters.)

BY RUTHVEN DEANE.

THE following letters, covering dates between 1828-30, show, as in other letters of Swainson's which I have published, his crude method of writing and expressing himself. In Dr. Albert Günther's interesting address delivered at the Anniversary Meeting of the Linnæan Society of London, May 24, 1900, he writes: "Swainson was extremely careless in orthography and loose in his style of writing; he persistently misspelt not only technical terms, but also the names of foreign authors, and even of some of his familiar friends and correspondents." These letters were written at a period when he was deeply engaged in his literary pursuits, yet in a discontented and nervous frame of mind, mortified at the slow sale of his 'Zoological Illustrations,' his temporary embarrassment for funds, and his evident growing dislike for American naturalists.

I am under many obligations to Miss M. R. Audubon for the gift of three of these letters and to Miss M. Eliza Audubon for the loan of the others with permission to publish them.

No. 1.

Tuesday 11 Nov. 1828.

I had written the enclosed, my dear Mr. Audubon, before your letter of Monday reached me. It has come this instant. Dreams, you know, must be always interpreted *contrawise*, we might have lifted up our arms, as you saw in your dream but, if you had not awoken, it was no doubt to have shaken hands! But that my regard for you may be evinced, I will bring myself to lay under an obligation, which I would only ask from one of my own family. I was that moment thinking to which I should write, to ask the loan of 80£ for a few months, and now I will ask it of *you*. If you was aware of the peculiar feelings which we Englishmen have

on such occasions, perhaps you would smile, but so it is that we never ask any one, from whom we have the least idea of a refusal. Now, did I not believe you to be a sincere friend, do you imagine I should have told you I was in want of Money much less have asked you to lend me some. The fact is, I have suffered a severe loss during my being in Paris, what little I had *on hand*, has been spent there and in making preparations for the publication of my Zool. Illustrations. Two or three months however, hard work will bring me round again & repay you.

Let me see your letter to the President of Zool. Soc.¹ before it goes, and you shall see mine.

I shall be most thankful for the Grouse. I send 2 drawings to Havell to be engraved *spur him on* for I want to have every thing ready before the new year.

Yours most sincerely
W. Swainson.

John J. Audubon Esq.
79 Newman St.

No. 2.

Friday.

[No date given, probably 1828].

My dear Audubon,

I am rejoiced to hear you are safe and well, & I answer your letter immediately, for I have no prospect of going to London, for some weeks, nor could I expect on a matter of urgent necessity, for I am to have my first volume or "Preliminary Discourse" ready the first week in June under a penalty of 500 £.

As I cannot come to you, pray write me some few of the many things you want to say to me. When once this volume is done I shall have time to breath. You will find I have put your friend V.[igors] *hors de combat*.²

¹ Audubon was elected an original member of the Zoölogical Society of London, February 24, 1828.

² While in Paris in 1828 Swainson entered into a lively controversy with Vigors, and as Dr. Theodore Gill writes "a great fire was kindled from a very little flame." For a detailed account see 'Osprey,' Vol. V, No. 3, and subsequent numbers.

He is now part of O'Connell's¹ Political *tail*. Kind regards to Mrs. A. & your son.

Ever yours, most sincerely
W. Swainson.

J. Audubon Esq.
care of Mr. Havell,
77 Oxford St.
London.

No. 3.

18 January, 1829.

My dear Mr. Audubon,

I write this in utter uncertainty whether it will find you in London. My first number² has now been out three weeks — it has been seen and universally admired, and how many copies do you think the Publisher has sold? now pray guess as the Americans say. 100 — no. 50 — no. twentyfive, no. fifteen, no. ten? yes. positively ten copies and *no more*, has been sold. I blush almost to confess this mortification to even, *you*, but so it is. Now, my dear Sir, what am I to think of the "generally diffused taste" as the phrase is, for Natural History.³

This although vexing to *me*, may be a consolation to *you*, who are able to exhibit on what I call your *Red Book* the names of a

¹ An Irish political patriot. Born 1775, died 1847.

² Zoological Illustrations. 3 vols., 1820-23, with 182 colored plates by himself. Second Series. 3 Vols., 1832-33.

³ In the preface of 'Zoological Illustrations,' Second Series, Vol. II, 1831-32, Swainson writes: "Neither literature nor art has been encouraged in our opulent Island, half as much as they have been by some of the petty Kingdoms of the Continent. It is a melancholy fact, that while our present laws crush individual exertion, by extorting a large number of free copies of the most costly works, undertaken by their Authors without the slightest hope of remuneration, the Government of France assigns *for subscriptions* to such publications, an annual sum of £10,000. But on questions regarding the patronage of science, Great Britain, unfortunately, is poorer than any Nation in Europe." This volume was dedicated to King Louis Philippe, of whom Swainson writes: "A true Patron to Science, munificently encourages, both privately and publicly, all who are engaged in its pursuit."

good portion of 150 Subscribers to a 200 guinea Book. Think yourself my friend exceedingly well off.

The amount of sale must be kept silent, it would be a nice nut to crack for V[igors]¹. & his friends.

I shall be able to do without the water birds, if you have not found any.

I have had a most extraordinary letter from Waterton,² which will highly amuse you. The man is mad. — stark, staring, mad.

Yours very faith'ly

W. Swainson.

Can you tell me any safe expeditions made of sending and receiving letters and Parcels from Philadelphia.

J. J. Audubon Esq.
79 Newman St.
Oxford St.

No. 4.

Saturday, 1 May, 1830.

Welcome once more, my good friend to merry England:³

I had indeed heard from Havell,⁴ with the greatest pleasure, that you had safely landed at Liverpool; and I regret very much that you did not reach London before I left it; for I am now much seldomer in town than formerly, and I know not when I may have the power to do so again. My old and most valued friend Mr. Burchell⁵ has also, to my great delight, just returned

¹ Nicholas Aylward Vigors. Born 1787, died 1840. Naturalist. First Secretary of the Zoölogical Society of London.

² Charles Waterton. Born 1782, died 1865. For one of his most vindictive letters to Swainson, see his 'Essays on Natural History,' 1871, p. 511. This effusion is bitter from start to finish and contains some four thousand words.

³ Audubon sailed for America April 1, 1829 where he remained one year, returning in April, 1830.

⁴ Robert Havell. Engraver of Audubon's plates. Born November 25, 1793, died November 11, 1878.

⁵ William John Burchell. Explorer and Naturalist, who collected extensively in Brazil, Africa, and other countries. Born 1782, died March 3, 1863.

to England after *six years* spent in wandering over the Forests and Andes of South America bringing with him collections, that will make everything else in this country *sink into utter insignificance*, he too, is longing to see me, and if I possibly can get away for a day next week, with two such desirable objects I will, but my literary engagements bind me, hand and foot.

You think I do not know that you are an F. R. S.¹ — you are mistaken, furthermore, will you be surprised at knowing I have been fighting your battles against a rising opposition which originated among some of your *Ornithological friends* (at least so I strongly suspect) for the purpose of your name being *blackballed*. But more of this when we meet, such matters had better not be committed to paper.

The whole of your bundle of young trees reached me as withered sticks, not a spark of life in any one of them.

So you are going to write a book 'tis a thing of little moment for one who is not known, because they have no reputation to loose, but much will be expected from *you*, and you *must*, therefore, as the saying is, *put your best leg foremost*. I am coming fast round to the prejudice, as you may think it, against the Americans.

Dr. Richardson's and my own volume on the Arctic Birds,² is now at press. Not being able to refer to your plates, I have not had the power to quote your work, you know how repeatedly I have applied on this head, both to you and Mr. Havell in vain.

Prince C. Bonaparte³ has long promised me his second & third volume but they have never come. Ward⁴ is a regular *Scamp* he has taught me a good lesson — fool that he is — and that is, to steal my heart against distress such as his was, and to consult, like all the rest of the world, my own interest only. I am sick of the world and of mankind, and but for my family would end my days in the primeval forests of my beloved Brazil.

¹ Audubon was elected a Fellow of the Royal Society of England, March 18, 1830.

² Fauna Boreali-Americana. Part II, 1831.

³ Charles Lucian Bonaparte. Born 1830, died 1857.

⁴ J. F. Ward. Swainson refers to him as an animal preserver of considerable talent.

So Mr. Lea¹ did not settle my account with you? I have found *him out*, also, to be no better than he should be. He also is one of your *friends* who would, if he could, cut your throat. Another *friend* of yours has been in England, Mr. Ord² and has been doing you all the *good* he can: if these are samples of American Naturalists, defend me from ever coming in contact with any of their whole race.

Mrs. Swainson's health I am grieved to say, has suffered much the last twelve months, she is now at Birmingham with the children. I have not failed to mention your kind inquiries after both, whenever Havell has a parcel for me, I hope you will occasionally accompany it with a few lines.

Yours my dear Sir very faith'ly

W. Swainson

John J. Audubon
at Mr. Havell's
79 Newman St.
Oxford St.

No. 5.

My dear Mr. Audubon:

I am still very poorly, but as I can put this under cover, I should wish to ask you, whether you would like to have a copy of my Illustrations,³ with the plain proof on India paper, there are only 10 printed for *private* Sale (to avoid the tax of Public Libraries)⁴ and I have just now one copy of the first volume bound up. Should you like it, you can return me the three numbers of the common edition. I shall then have greater hopes of possessing

¹ Isaac Lee of Philadelphia, Pennsylvania, naturalist and publisher. Born 1792, died December 8, 1886.

² George Ord. Born 1781, died January 23, 1866. I quote from 'Audubon and his Journals,' Vol. 1, p. 56: "Mr. Ord was one of those (of the very few, I might say) who disliked the Naturalist from first to last, who was perhaps, his bitterest enemy."

³ 'Zoölogical Illustrations.'

⁴ They secure the Author the sole right to publish his works for twenty-eight years, upon the presentation of eleven copies to the public libraries of the Kingdom.

myself of your Gigantic book, some day or other ; at present one of my *volumes* only cost as much as one of your *numbers* !

Let me, as a friend, request you not to decide irrevocably on the subject of your book. I have thought upon it much since I saw you, and I want to find time to write you more fully upon it than I was able to speak, on the first consideration of the matter, particularly as I was then nervous and unwell.

I hope in 2 or 3 days to write you this, at present I am much hurried, and am expecting Sir W. Jardine¹ and Mr. Selby² every day.

Yours very Faith'ly

J. J. Audubon Esq.

W. Swainson

43 (Toy shop, corner house)
Great Russell St.
Bloomsburg ?

13 May 1830.

No. 6.

My dear Mr. Audubon.

Your letter perfectly surprised me. I thought you were wandering about Lancashire ! Have you been and returned or are you going. Why are you so sad ? I would lay ten shillings that old Havell has been disappointing you as he has done me. He is in matters of business a complete *daudle* — an old woman, and I have done with him. His son I think better of he has a good idea of punctuality in business. Still he also wants an occasional spur. I have been drawing Richardson's Grouse, but have not succeeded to my mind.

I am terribly hurried in preparing my first number. Pray desire Havell to hand you a copy, & to supply you every month with it. I am preparing a few sets of the old Series, and one will be sent to you, our exchange will then be fairly commenced.

I wrote very particularly to Pitois³ three weeks ago, and am surprised at having no answer. I shall come to town some of these

¹ Sir William Jardine. Born February 23, 1806, died November 21, 1874.

² John Prideaux Selby. English ornithologist. Author of 'British Birds.' Born July 23, 1788, died March 27, 1867.

³ M. Pitois, Paris, France. Acted as Audubon's Agent on the recommendation of Baron Cuvier.

days unexpectedly and surprise you. I cannot however bear that you should be "in the blues" at this season of merriment and festivity. If therefore you think it would give you pleasure, it certainly would to Mrs. Swainson and myself to see you at our Christmas dinner, where there will be only ourselves. The weather is remarkably fine, and the change air and scenes will invigorate & make you for the time forget those every day annoyances which we are all subject to.

If you come, have the goodness to let us know and I shall trouble you to bring with you everything which Havell has for me & which he will pack up in a parcel, your bed is quite ready.

I shall thank you also to buy me a pair of clogg springs, similar to the pattern sent.

In one of your walks I hope you have thought about the *French Wine* that we talked so much about and have ascertained the particulars from your friend, so that we may order a cask. I hope you have not mistaken the price, — for if not, nothing that can be drank in this country is one half as cheap. Mrs. Swainson & the little ones are quite well & all hope to see you soon.

Ever yrs faith'ly

W. Swainson.

Monday morn.g.

J. Audubon Esq.

No. 7.

My dear Mr. Audubon

I welcomed the news of your arrival in America yesterday, and as I am making up a packet for Liverpool today, I seize the opportunity of wishing you joy and happiness in the new world. I am surprised and disappointed as not receiving one line from Ward it is at the best negligent, and somewhat ungrateful. Hope you have began your studies among the birds on a better plan than formerly, that is, in preserving the skins of every one on which there is the least doubt whether the bird is young or old, particularly the former. If you are to give scientific descriptions and definitions of the species this precaution is absolutely necessary. What your Americans do with their money I know not, Mr. Lea tells me he cannot procure one purchaser for my new Illustrations: *here* it now going on very well.

You asked me what you can do for me in America. I will tell you. Send me a cart load of shells from the Ohio, or from any of the *Rivers near New Orleans*. The *very smallest*, as well as the *very largest* — *all sizes*. I have been long expecting those which your son promised you for me near twelve months ago! *but I have heard nothing of them!* you may spend a few dollars for me and send people to fish the shells at the dry season, when the waters are *low*, that is the best time.

Things go on here much as usual, but I have not been in London since Xmas. The first volume, containing the Quadrupeds, of Dr. Richardson's work, is out. I am now busy in preparing the second, which contains the Birds. Let me particularly direct your attention to the manners of the Cedar Bird, *Ampelis Americana*. I suspect it feeds much on Insects in default of fruit, but what is desirable, is to know *the way* in which it captures Insects, whether as a flycatcher i.e. by seizing them on the wing, or like the Gold crest — by picking them up among the branches or leaves. I am now in close correspondance with Charles Bonaparte, & a most valuable correspondant he is.

Mrs. Swainson is just recovering from her confinement after giving me another little son I am happy today they are both going on well.

Wilson I believe mentions *two* birds very like the Red eyed Flycatcher, this is a point deserving your attention, but the *manners* of these birds are much more important. I feel convinced there are several species of my Genus *Ammodramus* shore finch, in the So. States, they all have narrow pointed tails, like the sea-sidefinch of Wilson. I further suspect there is more than one species confounded with the Towee Buntling.

I hope soon again to hear more fully from you, and of your ornithological acquisitions. The dear little ones are quite well.

Yours very sincerely,

Wm. Swainson

The Green 26 June 1829.

Mr. John J. Audubon
care of

Mess. Thomas E. Walker & Co.
Merchants.

New York.

No. 8.

My dear Mr. Audubon.

I delayed not replying to your last letter soon after I received it, and it fortunately was sent to Havell the very day that he was making up a packet for you, I conclude therefore it has long ago reached you. I know not in what part of the Wilds of America you may now be wandering, but I hope you are fully intent upon your great object, and that you are not only making drawings, and taking notes, *but preserving Skins.* of all your little favorites. Don't forget the *Shrikes*, of which I have strong suspicions there are 2 or 3 species mixed up with the name of Loggerhead. Should you be in the land of the *Scarlet Ibis*, do pray procure a dozen or two of the best skins, they are the most magnificent birds of No. America, and are said to be common towards New Orleans.

You will learn from the Newspapers how uncommonly severe is our winter the snow has now been upon the ground five weeks and it is still falling. I manage, however to walk out every day, and thus have acquired better health than I have enjoyed for many years.

Previous to your embarking to England, which I hope you will do very early in the spring you must do me one favor. Bring me two Grey Squirrels alive, and a cage full of little birds, either the painted or non-Pareil finch the Blue finch, or the Virginian Nightingale, as they are called, 3 or 4 of each to guard against casualties by death on the voyage. I do not care one farthing whether they sing or not, so that I presume they may be got for a mere trifle. The Squirrels would delight the little people beyond measure, and would prove a neverfailing source of amusement to them. I believe you have other kinds than the *grey*, so that any will do. If you cannot get them pray supply their place by two Parrots of America.

We continue pretty well at the Green.¹ Seldom go to town, but I find people begin to discover the true character of V.[igors] and many that were formerly his friends now speak very differently

¹ Tittenhanger Green. Within a mile of the little village of London Colwey, Herts.

of him. His father having died the property has come to him. He has now taken a fine house in the Regents park, and holds *conversazioni* (in humble imitation of those of the President of the Royal Society) every Sunday evening *during the season*!! all this is very grand, and he appears to have abandoned writing any more papers on ornithology, since I have begun to point out his errors.

Ward wrote to me since my last, he is a poor weak fellow, with a good natural disposition, but so little to be depended upon, that he is turned round by every feather, after inserting that he could not go on "in my service" as he called it, under *ten dollars* a week, he now says he should be most happy to receive *four*. He says not one word of his marriage, which proves his wish to deceive one. I have done with him.

My Boxes are in possession of Mr. Gilpin & shall thank you to procure them from him, and bring them back for me, they will hold your own things on the voyage.

I hope you have got for me *lots of River shells*. Mrs. Swainson writes in kind wishes, and the little children often talk of you, and ask me when you will come back.

Your sincere friend

W. Swainson

30 Jan'y 1830

J. J. Audubon Esq.

care of Mr. Havell

EXTIRPATED WEST INDIAN BIRDS.

BY AUSTIN H. CLARK.

IN THE present paper I have brought together all the evidence as to the existence in former years of birds not known at the present day on the islands of Barbados, St. Vincent, the Grenadines, and Grenada (with the exception of the members of the family Psittacidæ), and have given them what appears to me to be (in the light of my recent studies in West Indian ornithology) their proper standing.

Some of the birds represent (as the Purple Gallinule, *Ionornis martinica*) merely locally extirpated colonies of wide ranging species, while others (as *Cinlocerthia*) were probably subspecifically or even specifically distinct from those on the neighboring islands.

? *Podilymbus podiceps* (Linn.).

PIED-BILLED GREBE.

The Two-Penny Chick HUGHES, Nat. Hist. Barbados, p. 71 (1750).

Podiceps dominicus, *The Two-Penny Chick* SCHOMB., Hist. Barbados, p. 682 (1848). — FEILDEN, Ibis, 1889, p. 503; W. I. Bull., III, p. 352 [1902].

Hughes mentions a Grebe "of the Bigness and much the Colour of the *American Quail*" as occurring in Barbados in his day. Schomburgk also in his list includes a Grebe under the name of *P. dominicus*. *P. dominicus* has never been found in the Lesser Antilles, but *Podilymbus podiceps* is a breeding resident in many, if not most of the islands, and there is a specimen in the British Museum from Barbados. It is not known there at the present time. The name "Two-Penny Chick," formerly applied to the Grebe, is still used on the island, but now refers entirely to the Sora (*Porzana carolina*).

Col. Feilden has followed Schomburgk in giving the Grebe as *P. dominicus*; but for the reasons given above I prefer to regard it as *Podilymbus podiceps*.

Buteo (? antillarum Clark).

WEST INDIAN BUZZARD.

Bussard LIGON, Hist Barbados, p. 60 (1673)

Milan LIGON, Hist. Barbades, p. 101 (1674).

Buteo borealis SCHOMB., Hist. Barbados, p. 681 (1848).

Ligon says: "The birds of this place [Barbados] (setting two aside) are hardly worth the pains of describing, yet, in order, as I did the beasts, I will set them down. The biggest is a direct Bussard, but somewhat less than our Grey Bussard [*B. buteo*] in England, somewhat swifter of wing; and the only good they do is sometimes to kill the rats."

Schomburgk gives "*B. borealis*" as a resident on Barbados. Probably he refers to this species or a closely related form (as it is abundant on the neighboring islands of St. Vincent, Grenada, and Dominica) for *B. borealis* does not occur in the Lesser Antilles, except, perhaps, on St. Kitts.

Hughes (1750) does not mention any hawk.

At the time Ligon wrote the greater part of Barbados was still clothed in natural forest, and it is very probable that this hawk was then resident.

NOTE.—*Falco columbarius* is given by Schomburgk as a resident on Barbados (Hist. Barbados, p. 681, 1848). Col. Feilden (Ibis, 1889, p. 489; W. I. Bull., III, 342, [1902]) believes him to be in error, and he is not confirmed by other authors. However, there is a possibility that it did breed there in his time, as it is said to be a permanent resident on the island of Dominica, and occurs in all these islands as a fall and winter visitor.

Ionornis martinica (Linn.).

PURPLE GALLINULE.

Blue-Pated Coot HUGHES, Nat. Hist. Barbados, p. 71 (1750).

Ionornis martinica FEILDEN, Ibis, 1889, p. 499; W. I. Bull., III, p. 349 [1902].

I have no hesitation in referring Hughes "Blue-Pated Coot" to this species. He says, "They (Coots or Moor-Hens) are distinguished into Three Kinds; The White- [*Fulica americana*], the Red- [*Gallinula galeata*], and the Blue-Pated." They were apparently common in Barbados in his day.

At the present time it is only accidental on Barbados, although common on Dominica, St. Lucia, St. Vincent, the Grenadines, and Grenada.

NOTE.—*Gallinula galeata* and *Fulica americana* (probably referable to *F. caribæa* Ridgw.) are both now exceedingly rare on Barbados, although they were formerly abundant. Col. Feilden obtained a nest of the former in July, 1888, and found a few of the latter in Græme Hall Swamp in the same year. If not already gone, their extirpation is only a matter of a few years. I found no examples of either.

Columba squamosa Bonn.

RAMIER.

? Pigeons SLOANE, Nat. Hist. Jamaica, I, p. 34 (1707).

The Wild Wood Pigeon HUGHES, Nat. Hist. Barbados, p. 76 (1750).

Sir Hans Sloane writes, speaking of Barbados, that "Turner (ap. Purchas. p. 1265) found Hogs, Pigeons, and Parrots there."

Hughes says of "The Wild Wood Pigeon": "This is about the Bigness of an House Pigeon. The Head is of a blackish Colour; and from the under Bill to the Breast, of a light Mouse-Colour; from thence to the Belly and the under Part of the Tail, of an Ash-Colour; the upper Side of the Neck, Back, and Wings, of a dark Ash-Colour, growing lighter toward the Extremities of the Wings.

"These come hither, tho' in no great Numbers, about the latter End of July or August, always alighting upon Trees, and feeding upon the Berries of them."

Although the coloration is rather inexact, Hughes probably refers to this pigeon, as the size is pretty close, and he mentions

its exclusively arboreal habits. *Columba squamosa*, although abundant on the neighboring islands, does not now visit Barbados, possibly because of the cutting down of the forests.

***Geotrygon montana* (Linn.).**

PERDRIX.

This bird appears to be now extirpated from St. Vincent, possibly as a result of the importation of the mongoose. I am told that it has disappeared from St. Kitts, and is becoming rare on other islands, more especially on Grenada.

***Strix* (? *nigrescens* Lawr.).**

OWL.

Strix flammea SCHOMB., Hist. Barbados, p. 681 (1848).

Schomburgk includes "*S. flammea*" in his list of the birds of Barbados. No other author mentions any owl, but possibly some form of this genus occurred when the island was largely under forest. It may have been *S. nigrescens*, at the present time a common resident on Dominica, St. Vincent, Bequia (Grenadines), and Grenada.

NOTE.—*Colinus virginianus* (Linn.) is included by Schomburgk in his list of the birds of Barbados. There appears to be no evidence that this bird ever lived there, although it is resident on several of the more northern islands. Possibly he came into the possession of a stray specimen captured in the island, as he obtained in this way a specimen of the Ruff (*Pavoncella pugnax*). A Quail was shot in Barbados in September, 1886, and another seen in September, 1887.

***Cinclocerthia* sp.**

QUAKING THRUSH.

Thrush LIGON, Hist. Barbados, p. 60 (1673).

Grive LIGON, Hist. Barbades, p. 101 (1674).

Quaking Thrush HUGHES, Nat. Hist. Barbados, p. 72 (1750).

Turdus jamaicensis (!) SCHOMB., Hist. Barbados, p. 681 (1848).

Ligon says: "The next is a bird like a Thrush, of a melancholy look, her feathers never smooth, but always ruffled, as if she were mewing, her head down, her shoulders up, as if her neck were broke. This bird has for three or four notes, the loudest and sweetest that I ever heard; if she had variety, certainly no bird would go by her; she looks always as if she were sick or melancholy."

Hughes writes: "We have Two species of Thrush in this Island." One "is a solitary Bird, and is known by the name of the *Quaking Thrush*."

Schomburgk gives "*Turdus jamaicensis*" in his list, calling it the "Quaking Thrush."

The members of the genus *Cinclocerthia* all have a peculiar habit of occasionally shivering or shaking, as if afflicted with ague, which has given them the name of "Trembleur" in all the islands where they are found at the present time. This habit is not shared by any other Lesser Antillean genus, so we appear to be justified in referring the "Thrushes" of the authors mentioned to *Cinclocerthia*. I interpret Ligon's statement that the bird always appears "sick or melancholy" to have reference to this peculiarity also, a comparison between the shivering of the bird and the shaking of a person ill with a tropical fever.

At the present time, *Cinclocerthia* occurs on all the islands from Guadeloupe south to St. Vincent, as well as on some of the more northern Lesser Antilles. It was probably driven from Barbados by the deforestation of that island.

Allenia (? *albiventris* Lawr.).

"WREN."

Wren LIGON, Hist. Barbados, p. 60 (1673). HUGHES, Nat. Hist. Barbados, p. 73 (1750).

Roytelet LIGON, Hist. Barbades, p. 101 (1674).

Ligon says: "Another there is, not unlike a Wren, but big as a Thrush; and this is as merry and jolly as the other [*Cinclocerthia*] is sad; and as she sits on a stick, jets, and lifts up her train [tail], looking with so earnest and merry a countenance, as if she would

invite you to come to her, and will sit till you come very near. This bird I never heard sing."

Hughes writes: "The Wren. This, excepting its Note and Bill, differs very little from the Thrush, as to its Plumage and Bigness. Its Bill is somewhat more sharp pointed and longer than that of the Thrush.

"It is most commonly to be seen in the Wood near Hackleton's Clift, and feeds chiefly upon Oranges and such ripe Fruit, as well as upon Lizards."

I believe that there can be no doubt that these descriptions refer to an *Allenia*. The habit of keeping the tail in the air like a wren is very characteristic, and in its actions it is lively and restless. If it inhabited Barbados, one would expect it to be found in the rugged country about Hackleton's Cliff and in the Scotland District, and not in the level portions of the island, as it is a bird of the hills.

A. albiventris (Lawr.), the only species of the genus, occurs from St. Eustatius to St. Vincent, and also on Grenada.

Margarops sp.

"COUNSELLOR."

Counsellor LIGON, Hist. Barbados, p. 60 (1673).

Counseiller LIGON, Hist. Barbades, p. 102 (1674).

Thrush HUGHES, Nat. Hist. Barbados, p. 72 (1750).

Turdus mustelinus (!) SCHOMB., Hist. Barbados, p. 681 (1848).

Ligon writes: "The next is of the colour of a Fieldfare [*Turdus pilaris*], but the head seems too big for her body, and for that reason they call her Counsellor; her flying is extremely wanton; and for her tune, 'tis such as I have not heard any like her, not for the sweetness."

According to Hughes: "We have two Species of Thrush in this Island; the one much resembling in her note the English Thrush.

"As soon as the Day appears, she mounts up like a Lark into the Air, almost out of Sight."

Of the two "Thrushes" included by Schomburgk in his list, "*Turdus jamaicensis*" must refer to a plain colored bird without

any distinctive markings; as he also gives it the name of "Quaking Thrush," we refer it to *Cinclocerthia*; the other, "*T. mustelinus*," is probably the second species mentioned by Ligon and Hughes; there is, however, a possibility that he refers to *Allenia* under this name.

I have referred these "Thrushes" to *Margarops* and not to *Cinchlerminia*, as the former genus is more widely distributed, its species more abundant where they occur, and not essentially birds of the deep woods (as are the species of *Cinchlerminia*), and the habits as given agree better with those of *Margarops*. Moreover, a male of *M. fuscatus densirostris* (a straggler) was obtained on Barbados on March 2, 1889.

Cœreba atrata Lawr.

Normal Form = *saccharina* Lawr.

MOLASSES BIRD.

The Yellow-breasted Honey Creeper appears to have become extinct on St. Vincent. I could find no trace of it. Ober obtained two specimens in 1878, but Lister, writing in 1880, does not mention it. It seems to be now wholly replaced by the black form (*atrata* Lawr.).

Cœreba wellsi Cory.

Normal Form.

SUCRIER.

Ober says (1878) that "this bird is not found in great numbers (on Grenada), as in some of the northern islands (? northern Lesser Antilles, or Grenadines); indeed I have seen it but twice on the mangrove flats of Point Saline." This is inserted under the heading "*C. atrata*," but must refer to this bird, as the black form is abundant all over Grenada. Wells says it is not found at all in Grenada.

In May, 1904, while at St. George's, Grenada, Mr. Charles

Vernet very kindly presented me with a specimen of this bird, taken by himself at Point Saline; it was the only one he ever saw.

It is abundant on all the Grenadines.

Besides these forms, I failed to find the following on St. Vincent, although I explored almost the whole island very carefully. Possibly they still exist in limited numbers in certain remote localities.

Catharopeza bishopi (Lawr.).

Cinclocerthia ruficauda tenebrosa Ridgw.

Cinchlerminia sanctæ-lucie (Scl.).

Allenia albiventris (Lawr.), which became a common resident on Union Island and Carriacou, Grenadines, after the great hurricane at St. Vincent in 1898, has now entirely disappeared from those islands.

THE LESSER ANTILLEAN MACAWS.

BY AUSTIN H. CLARK.

WE FIND mentioned by the earlier writers who dealt with West Indian ornithology, a number of birds which are not known to inhabit the islands at the present day, and which have been extinct for many years. In this paper I shall bring together all the evidence existing as to the presence of Macaws in the Lesser Antilles, in the islands of Guadeloupe, Dominica, and Martinique.

These three islands collectively show affinities to the Greater Antilles and to South America, at the same time having genera and species peculiar to themselves. For instance, a species of *Mimocichla* (Dominica) and a species of *Melanerpes* (Guadeloupe), together with the fact that *Guara alba* is a breeding resident on Dominica, appear to show a Greater Antillean relationship; *Dendroica rufigula* (Martinique), *Stenopsis cayenensis* (Martinique), *Ceryle stictipennis* (Guadeloupe and Dominica), and *Rup-*

*ornis magnirostris*¹ Martinique) seem to ally them with South America; while *Cinchlerminia*² (Guadeloupe, Dominica, and Martinique), *Rhamphocinclus brachyurus* (Martinique and St. Lucia), *Saltator guadeloupensis* (Guadeloupe, Dominica, and Martinique), and *Thalurania bicolor* (Dominica) demonstrate that as a group they are distinct from the islands around them.³

We must admit, then, the possibility of these three islands having had upon them species of the genus *Ara* (which is found in the Greater Antilles, Central, and South America), even although it is unknown from any of the other Lesser Antilles.

Dutertre (1654) is the first to give an account in detail of the ornithology of these islands. Under the heading "*De l' Arras*" (p. 294) he says: "We have in Guadeloupe three of the parrot kind, viz: — Macaws, Parrots, and Parrakeets, each different from those which inhabit the neighboring islands; for each has its parrots different from those of the others in size, voice, and color.

"The Macaw is the largest of all the parrot tribe; for although the parrots of Guadeloupe are larger than all other parrots, both of the islands and of the main land, the Macaws are a third larger than they.

"The head, neck, underparts, and back are flame color. The wings are a mixture of yellow, azure, and scarlet. The tail is wholly red, and a foot and a half long. The natives hold the feathers of the tail in great esteem; they stick them in their hair, and pass them through the lobe of the ear and the septum of the nose to serve as mustaches, and consider themselves then much more genteel and worthy of the admiration of Europeans.

"This bird lives on berries, and on the fruit of certain trees, but principally on the apples of the manchioneel (!), which is a powerful and caustic poison to other animals. It is the prettiest sight in the world to see ten or a dozen Macaws in a green tree.

¹ Vide Gurney, Ibis, 1876, p. 482.

² One species is found on St. Lucia also.

³ St. Lucia, with a resident South American species (*Antrostomus rufus*) and two peculiar genera (*Melanospiza* and *Leucopeza*), together with a species of *Cinchlerminia*, is most nearly allied to them.

Their voice is loud and piercing, and they always cry when flying. If one imitates their cry, they stop short. They have a grave and dignified demeanor, and so far from being alarmed by many shots fired under a tree where they are perched, they gaze at their companions who fall dead to the ground without being disturbed at all, so that one may fire five or six times into the same tree without their appearing to be frightened.

"The natives make use of a stratagem to take them alive; they watch for a chance to find them on the ground, eating the fruit which has fallen from the trees, when they approach quietly under cover of the trees, then all at once run forward, clapping their hands and filling the air with cries capable not only of astounding the birds, but of terrifying the boldest. Then the poor birds, surprised and distracted, as if struck with a thunderbolt, lose the use of their wings, and, making a virtue of necessity, throw themselves on their backs and assume the defensive with the weapons nature has given them — their beaks and claws — with which they defend themselves so bravely that not one of the natives dares to put his hand on them. One of the natives brings a big stick which he lays across the belly of the bird, who seizes it with beak and claws; but while he is occupied in biting it, the native ties him so adroitly to the stick that he can then do with him anything he wishes.

"The flesh of this bird is very tough, and considered by many unwholesome, and even poisonous. I never had any ill effects from it, although we inhabitants often eat it."

In a later work (1667) Dutertre gives practically the same account, but he says that the Macaws only eat the manchioneel apples in case of necessity (II, p. 247). He says further (II, p. 249), "The male and the female are inseparable companions, and it is rare that one is seen singly. When they wish to breed (which they do once or twice a year) they make a hole with their beaks in the stump of a large tree, and construct a nest with feathers from their own bodies. They lay two eggs, the size of those of a partridge (*Perdix cinerea*). The others of the parrot kind make their nests in the same way, but lay green eggs. . . . The Macaws are much larger than the large parrots of Guadeloupe or Grenada, and live longer than a man; but they are almost all subject to a falling sickness."

In the "*Histoire Naturelle et Morale des Isles Antilles de l'Amérique*" (1658; 1665) we find the following (p. 154, 2nd ed., p. 170):—

"The Macaws are preëminently beautiful birds, the size of a pheasant; but they resemble parrakeets in the shape of their body. Their head is large, their eyes bright and bold, their beak hooked, and they have a long tail composed of beautiful feathers which are of different colors in the different islands where they live. There is a kind which has the head, the back, and the wings pale yellow, and the tail entirely red. Others have nearly the whole body flame color, except that they have in their wings feathers of yellow, blue, and red. Still others are found which have the whole plumage a mixture of red, white, blue, green, and black; that is, five colors, which forms a very pleasing combination. They commonly fly in flocks. One judges by their actions that they are bold and resolute, for they are not alarmed by the report of fire-arms, and if none are wounded at the first discharge, they await a second without moving from the place where they are; but there are many who attribute this boldness to their natural stupidity rather than to their courage. They tame very easily, but their tongue is too thick to enable them to speak as well as parrots and the smaller parrakeets. They are so sensitive to cold that it is difficult to bring them across the sea."

Labat (1742) says (II, p. 211): "The Macaw, which I place at the head of the parrots, is the largest of all the parrot tribe, either in these islands or on the mainland. It is the size of a full grown fowl. The feathers of the head, neck, back, and underparts are flame color; the wings are a mixture of blue, yellow, and red; the tail, which is from fifteen to twenty inches in length, is wholly red. The head and the beak are very large, and it walks gravely; it talks very well, if it is taught when young; its voice is strong and distinct; it is amiable and kind, and allows itself to be caressed."

He also says (II, p. 211): "There are Macaws, Parrots and Parrakeets in each of our islands, and it is easy to tell from their plumage from which island they have come. Those from Guadeloupe are generally larger than the others, but the parrakeets are smaller."

Buffon (Hist. Nat. Ois., VI, p. 181, 1774) states that Macaws occur in all the warm parts of America, and in the West Indies. He says further (*l. c.*, p. 177): "Christopher Columbus in his second voyage touched at Guadeloupe and found there Macaws, to which he gave the name of 'Guacamayas.' He met with them only in the uninhabited islands, and they were by far the most beautiful ornaments of the gloomy forests which covered the land given up to nature."

Brisson (Orn., IV, p. 183, 1760) says (under "L'Ara Rouge"), quoting from a letter from M. de la Borde, Médecin du Roi at Cayenne: "In all the islands (Antilles) the Macaws have become very rare, because the inhabitants destroy them for food. They retire into the unfrequented districts, and do not come near the cultivated areas."

Edwards says (Birds, IV, p. 158, 1751): "This bird ('The Red and Blue Maccaw') is a native of America, and, I believe, is found everywhere between the tropics, not only on the continent but on some of the American islands."

Latham says of the "Red and Blue Maccaw" (Gen. Hist. Birds, II, p. 102, 1822): "Inhabits Brazil, Guiana, and other parts of South America, and, we believe, some of the islands also, but becomes scarce or wholly eradicated in proportion to the increase of inhabitants."

From the foregoing we appear to have ample proof that there were Macaws in these islands; we are told also that they were becoming rare before 1760 (Brisson). That the various members of the parrot tribe are among the first to be exterminated from any given locality, especially if the species be confined to an insular habitat, we learn from the cases of *Nestor productus* Gould (Philips Island), *N. norfolcensis* Pelz. (Norfolk Island), *Lophopsittacus mauritianus* (Owen) (Mauritius), *Necropsittacus rodericanus* (Milne-Edw.) (Rodriguez), *Mascarinus mascarinus* (Linn.) (Réunion), and *Palaeornis exsul* Newt. (Rodriguez); and so, everything considered, I believe we are justified in giving credence to the writings of the three principal authors quoted. That they knew of the different conditions which pertain in the different islands is brought out in their remarks about the parrots being different in the different islands, and also by the account of the Armadillo

given by Dutertre and Labat. Both record this animal as found only in Grenada, and say that it cannot be introduced into the other islands. To-day Grenada is the only island (except, of course, Tobago and Trinidad) where the Armadillo is found, and it is there known by the same name that they give it — Tatu.

The Lesser Antillean Macaw, as described by Dutertre, had "the head, neck, underparts, and back, flame color; wings azure, yellow, and scarlet; tail red, 18 inches long." Labat says: "Head, neck, back, and underparts flame color; wings blue, yellow, and red; tail red, 15 to 20 inches long."

This shows that the bird differed from *A. macao* in (1) having the tail wholly red; in *A. macao* the two central feathers are red, the others with blue tips, increasing in extent to the outer pair, which are almost wholly blue; and (2) in having a shorter tail (? smaller¹); the tail of *A. macao* is two feet long.

From *A. chloroptera* it differed (1) in having a wholly red tail (*A. chloroptera* has even more blue in the tail than *A. macao*); (2) in having yellow on the wings, and (3) in having a shorter tail (? smaller); the tail of *A. chloroptera* is 21 in. long.

From *A. tricolor* it differed in (1) having yellow on the wings, and (2) in having a much longer tail (? larger); the tail of *A. tricolor* is 10 in. in length.

Dr. Latham has figured and described (Gen. Hist. Birds, II, p. 107, pl. xxi, 1822) under the name of the "Red and Yellow Maccaw," a bird entirely scarlet, except the posterior half of the wings, which is yellow; the lower rump, and tail coverts are rose white. The bird came from Trinidad (!) (probably Guiana or Venezuela), and appears to be a variety of *A. macao*.

D'Aubenton (Pl. Enl. 12, "L'Ara Rouge") figures a bird with all the tail feathers red (central pair and three on right side shown), and with much more red on the scapulars and tertials than in *A. macao*. There appears to be a possibility that the fig-

¹ In the Macaws the relative length of tail and wing, or of tail and total length is variable, so that we cannot say with certainty that the bird was smaller. *A. tricolor* measures, tail 10 in., wing 11 in., total length about 18 in.; *A. ararauna*, tail 12 in., wing 14 in., total length about 31 in.; *A. macao*, tail 23.5 in., wing 16 in., total length about 31 in. In the green Macaws the wing and tail are about equal in length.

ure is from a West Indian bird, although it is regarded by systematists as a specimen of *A. macao*.

The names which have been applied to Red and Blue Macaws are all referable to *A. macao* or to *A. chloroptera*. Linnæus (Syst. Nat., I, p. 139, no. 1, 1766), under [*Psittacus*] *macao*,¹ refers to the Pl. Enl. 12; but in his description says "rectrices rubræ, lateribus cæruleis," his diagnosis being referable to *A. macao* as now understood. *Ps[ittacus] aracanga* Gmelin (Syst. Nat. I, p. 313, 1788) et auct., *Ara canga* Levaill. (Perr., I, pl. 2, 1801) and *Sittace coccinea* Reichenow (J. f. O., 1881, p. 267) are all referable to *A. macao*.

I believe we are justified in admitting provisionally into the avifauna of the Lesser Antilles a red, yellow, and blue Macaw, under the name of

Ara guadeloupensis.

LESSER ANTILLEAN MACAW.

Characters. Apparently similar to *A. macao* Linn., but smaller (tail 15 to 20 in. long [Labat]; 18 in. long [Dutertre]), and with the tail wholly red.

Habitat. Guadeloupe (extinct); ? Dominica (extinct); Martinique (extinct).

Ara DUTERTRE, Hist. Générale des Isles des Christophe, de la Guadeloupe, de la Martinique, et autres dans l'Amérique, p. 294 (1654); Hist. gén. des Antilles habitées par les François, II, p. 247 (1667).² — ANON.,³ Hist. Nat. et Morale des Isles Antilles de l'Amérique, p. 154 (1658), 2nd ed., p. 170 (1665). — LABAT, Nouv. Voyage aux Isles de l'Amérique, contenant l'histoire naturelle de ces pays, II, p. 211 (1742). — BUFFON, Hist. Nat. Ois., VI, p. 181 (1774) (part).

¹ The name "macao" was given to this bird because it was first supposed to have come from Macao, near Hong Kong. The English "Macaw" is supposed by some to be derived from it.

² In the title it says "en deux tomes," but three volumes were published — Vol. I (1667); Vol. II (1667); and Vol. III (1671), entitled "Histoire Générale des Ant-Isles habitées par les François" (Paris). The spelling "Ant-Isles" is to agree with a theory of the author's as to the derivation of the word "Antilles."

³ This book was published at Rotterdam; other early writers refer to it as being the work of C. César de Rochefort.

L'Ara Rouge, ? D'AUBENTON, Pl. Enl. 12. — BRISSON, Orn., IV, p. 183 (1760) (part).

The Red and Blue Macaw (part) EDWARDS, Birds, IV, p. 158 (1751). — LATHAM, Gen. Hist. Birds, II, p. 102 (1822).¹

NESTING HABITS OF BIRDS IN MISSISSIPPI.

BY CHARLES R. STOCKARD.

(Concluded from p. 158.)

THE FOLLOWING observations complete a summary appearing in this journal of the nesting habits of birds recorded by the writer in Mississippi from 1895 to 1903 inclusive. As stated in the introduction to the former article, no attempt is made to enter into the details of nest building and such matters as are commonly known. Only the important facts regarding nesting seasons, places, and peculiarities are stated, these being of general interest coming from a locality hitherto not specially observed.

45. *Cyanocitta cristata*. BLUE JAY (concluded). — The outside of the Jay's nest is composed of coarse sticks and above these is then daubed and plastered a thick coat of mud; here the work seems to stop for several days, apparently to allow the mud to dry and harden more advantageously than it would if immediately covered with the lining of fibrous roots which is to be later added. In many cases cloth, paper, strings, leaves, etc., enter into the composition of the nest. One was found with no lining whatever, the eggs being deposited on the hard mud floor.

The sets taken early in the season contained almost invariably five eggs while those observed near the close of the laying time, about the last of May, consisted of only four. Whether these late sets were second layings of the season or not I am unable to state, but in some instances such was apparently not the case. The Blue Jay's earliest set was found March 29, 1899, and the latest June 5, 1897.

46. *Corvus americanus*. AMERICAN CROW. — The Crow is common throughout the State and detested by most farmers as a corn consumer.

¹ The references to Latham's 'Index' and 'Synopsis' are given in this book.

A total of forty-two nests were visited, all situated in pine trees with the exception of two that were in large water oaks and one in a hickory. In each case the nest tree was in dense foliage with the one exception of that in the hickory, which was utterly bare, and the nest was fully exposed to view on three of its sides. One nest was only twelve feet up in the forks of a dwarfed pine, while another was about seventy feet from the ground in a large water oak, the average distance from the ground being about forty feet. The nest tree always stood in more or less of a wood, never out in a clearing. In the east central part of the State nearly all nests contained five eggs, while in the southwest portion only one set of five was taken, all others containing only four eggs. March 9, 1901, the earliest set was collected and the latest was found on April 22, 1900. The Crows generally became very noisy in the neighborhood of the nest tree as soon as one had well started on his climb, so that the observer felt almost certain about the condition of the nest that he was struggling to reach.

47. *Agelaius phoeniceus*. RED-WINGED BLACKBIRD. — This was by far the most plentiful blackbird of the marshes, and often nested in considerable colonies. A small marsh in Lowndes County was found to contain on May 30, 1896, forty-seven occupied nests of these birds. The marsh was not visited again for three years; then only nineteen nests of the season were found. This falling off in numbers was probably due to the fact that the fields near the marsh were now under cultivation, and that the farmers tried to destroy these birds, which are very fond of corn and are often industrious enough to scratch it up shortly after it has been planted. In the spring of 1901 eleven nests of the Red-wing were found in a peach orchard which was located one mile from the Mississippi River, but the ground was dry and not at all marshy. I never saw the nest actually placed on the ground but have found several only a foot from it, and have visited others twenty-five feet up, but they were generally situated about six or eight feet high in small shrubs or bushes. The nests were plaited in between the prongs of vertical forks or fastened to the stalks of several reeds growing close together. The set generally contained four eggs, though in many cases it consisted of only three. Their nesting time was rather late in the season, the limiting dates noted being May 12 and June 27; the height of the breeding time was about June 1.

48. *Sturnella magna*. MEADOWLARK. — The pleasant call of this bird is the most familiar note of many fields and pastures. Its nest is placed in a slight depression on the ground near the base of a small bush or tuft of sedge or other grass. The nest is as a rule arched over the top in oven-bird fashion, but is again sometimes almost roofless. The female is usually found at home and will allow one to approach within a few feet before she is flushed, then she flutters and staggers off as if utterly unable to fly, as was noted above in reference to the Mourning Dove, Killdeer, Chuckwill's-widow, and is a common trick of many smaller birds that

nest on the ground. No doubt this serves them well in drawing off other animal intruders from their eggs and young. I have seen an untrained dog follow a bird for many yards snapping at her every few paces until she was a safe distance from her nest when she arose and flew swiftly away to a perch from which she might watch results. The pursuer was so dismayed at her ability to escape that he would rarely turn to go back in the direction of the nest, and it was highly probable that in his intense interest in the chase the nest was entirely overlooked. The extreme dates of noting these eggs were April 29, 1898, and June 7, 1896.

49. *Icterus spurius*. ORCHARD ORIOLE. — This species was rather abundant in all parts of Mississippi while the following one, *galbula*, was locally distributed. The cup-shaped nest of *spurius* is easily found in orchard trees as well as in the trees along roadsides and in many groves. Though the nest is not quite so deep as that of the Baltimore it is just as artistically constructed yet not so gracefully swung. The grass forming the outer nest wall is in some cases a rich golden while in others it has a decided greenish tinge, giving in each instance a neat new appearance. On May 17, 1900, a set of seven eggs of this species was taken, which is larger than any other set that the writer has seen recorded for this bird. The earliest full set was found May 4, 1899, and the latest on June 8, 1900. Most sets contained five eggs but six was not uncommon. Finally mention should be made of two nests that were extremely interesting in their uniqueness. In both cases these nests were completely hidden and tucked away in large masses of Spanish moss which swung from the limbs of live oak trees. The birds had worked their way into the moss and constructed their nest, using, however, the ordinary building material and not the moss which served only to conceal and suspend their home. These nests were very attractive pieces of bird work.

50. *Icterus galbula*. BALTIMORE ORIOLE. — The distribution of this bird was rather remarkable; in many counties it was not seen at all, while in other parts of the State it was as plentiful as the Orchard Oriole. Adams County was more highly favored by its presence than any other section closely observed. I found near Natchez as many as four occupied nests in a single oak tree. The nests were either tied or plaited to the prongs or forks with cotton cord or various strings, and when these seemed not available grass blades and stems served equally as well. The sets were generally composed of five eggs and were all collected during the month of May.

51. *Quiscalus quiscula*. PURPLE GRACKLE. — These grackles were found nesting in the trees of small marshes and also in the large oaks and gums of hill sides. They nested more or less in company and no nest was found situated alone. Several nests were often placed in the same tree. In the Lowndes County marsh mentioned in connection with the Red-winged Blackbirds this grackle also nested in large numbers. Their nests were placed overhead in the gum and willow trees while the Redwings occupied the bushes below. On May 30, 1896, in this marsh

fourteen occupied nests of the grackle were found. In Oktibbeha County was a low hill-top on which stood about ten large gum trees, and the Purple Grackles built in these each season. Most sets contained five eggs but four was not an uncommon complement. The earliest set was noted May 3, 1896, and the latest June 6, 1899.

52. *Quiscalus major*. BOAT-TAILED GRACKLE. — These birds were rarely seen, but on one occasion a marsh was visited in which they nested, though it was too late for their laying season, the date being June 21. The newly fledged young were fluttering about and many of the adults were flying nervously from tree to tree.¹

53. *Passer domesticus*. ENGLISH SPARROW. — As in almost all parts of the country this sparrow is truly a nuisance in Mississippi. No one after observing can doubt the fact that these pests are driving many native birds into the background. They have taken possession of many martin houses, bluebird and woodpeckers' nests, as well as every other available cavity they can find. They nest under the eaves of houses and in the vines clinging to the walls of buildings. Thus some buildings with vine-covered walls have at times become almost uninhabitable on account of the bird lice that wander all through the house from the nests in the vines. There was a church in Columbus the walls of which were completely covered with ivy and the ivy was almost as completely filled with sparrows' nests. Permission was obtained to raid this colony and in one day four hundred and fifty-nine eggs were taken and about seven hundred young sparrows were killed. The mass of hay and trash used in building these nests was astonishing; it at least can never be held against the sparrow that she is too lazy to carry nest material unless on account of their compound nests mentioned below. Several compound nests were found, one a large ball of hay with three small openings each leading to a separate feather-lined chamber containing a set of eggs. Single nests were also seen containing a brood of feathered young and a set of slightly incubated eggs, which were probably warmed by the young, but of course this cannot be positively stated. In Mississippi these birds nest during almost the entire year, but no exact data were obtained as to the total number of sets produced by a single pair within twelve months.

54. *Spizella socialis*. CHIPPING SPARROW. — This sparrow was rather common along the edges of sparse woods and in young pine brakes. All nests found were hidden in the thick foliage of young pines from four to fifteen feet above the ground. A number of pairs were accustomed to nest year after year in the same young pine brake. May 7 the earliest set was taken, and sets were seen as late as June 10.

55. *Spizella pusilla*. FIELD SPARROW. — These birds select various

¹ Since this paper was sent to the printer I have found three large colonies of Boat-tailed Grackles nesting in Washington County. They began laying April 28, and all the sets contained five eggs each.

sites for nesting such as blackberry vines, low hawthorn bushes, and often the nest is tucked down into a tussock of sedge grass. The sparrows are common in the fields, along the edges of woods, and among the bushes bordering roadsides. A large number of sets were observed, most of them consisting of four eggs but many had only three. For so small a species their nesting season began rather early, eggs being found on April 14, 1900, and the latest were seen on May 21, 1896.

56. *Peucaea aestivalis bachmanii*. BACHMAN'S SPARROW. — Only one nest of this sparrow was found. The birds were very rare, being seldom seen. The one nest was built over a slight depression on the ground close beside a small bunch of weeds, and composed of dead grass blades and stems. It was totally roofed over and the eggs could only be seen by slightly stooping so as to look back under the roof where they lay upon the nest bottom of grass. The location was near a brake of mixed pine and oaks. The date of finding was May 14, 1896, and the nest contained four fresh eggs.

57. *Pipilo erythrophthalmus*. TOWHEE. — The Towhee is common in most of the small brakes and woods and its strong note is a familiar sound through the entire year. All the nests were placed in low thick bushes or vines, usually two or three feet from the ground; none were seen directly on the ground. They lay during the month of May and comparatively fresh sets were taken June 6, 1899, and June 3, 1902. There were always three eggs in the set.

58. *Cardinalis cardinalis*. CARDINAL. — The 'Redbird,' as it is generally termed through the Gulf States, was common everywhere, and so familiar has it become that the nest is often placed in the vines that shade the galleries and arch the entrances of houses. They were found nesting in rose bushes and vines of the flower gardens, and in orchards their nest was a common sight. When, on the other hand, they were found in the deep woods and the thickest canebrakes, they were very shy and would flit off of the nest sometime before the disturber came close to it, flying away to a safe distance and uttering their twitter at intervals until danger was past. Three eggs almost invariably constituted the set in this section; in the many seen only two or three contained four eggs. The Cardinal was an early nester, beginning about the tenth of April and fresh eggs are rarely taken after May 20. Some eggs were scarcely spotted at all while some were covered almost entirely by large light chocolate blotches. In sets of three eggs two were usually lightly marked while the third was so heavily spotted that it resembled its set mates only in size. In one set of four that I have all the eggs are similarly marked.

59. *Guiraca caerulea*. BLUE GROSBEAK. — This very interesting species was by no means a stranger in Mississippi, nor was it very common in many portions. The earliest set was found on May 9, and the latest on June 1. Several sets were found, all consisting of four eggs each.

In connection with this bird the following interesting and peculiar observation was made.—May 18, 1895, a nest containing four fresh eggs

was found in the bushes that bordered a country road in Lowndes County. This road was used in the fall and winter for hauling cotton and some of the lint remained tangled in the bushes throughout the year. The nest was placed three and one half feet from the ground in a crotch of a small gum bush, and the outer part of it was cotton giving the whole much the appearance of a ball of lint caught in the branches. This nest and set of four eggs were taken. Two weeks later, June 1, on chancing to pass along the same road and glancing toward the former nest bush a second nest was seen. This was exceedingly like the other, its outer part being of cotton, and was placed in the identical crotch from which the first had been removed. On approaching it was found also to contain four fresh Blue Grosbeak's eggs. This was rather quick work, building a nest and laying four eggs within fourteen days. These birds are not very common in this section and it looks highly improbable that two pairs would have selected the same fork of a bush during one season. Presuming that one pair built both nests, which seems to be the case, this is a most marked illustration of the lack of ability to select another site when one proves so unfavorable. Considering the promptness with which the nest was replaced evidently no attempt was made to choose another suitable bush from the many close at hand.

60. *Passerina cyanea*. INDIGO BUNTING.—This bunting was not a common bird, but it was often seen perched on the tops of bushes or the tip of a weed where it uttered its pleasant warble, more frequently about midday. The nests were found in low bushes and blackberry vines near the edges of fields, but were also found in dense cane thickets, in which locality the foundation of the nest was made entirely of cane leaves. The nest was placed only a few feet from the ground. The sets usually contained three eggs, rarely four. The earliest noted set was May 6, 1897, and the latest June 9, 1900.

61. *Passerina ciris*. PAINTED BUNTING.—In only one county of the State was this bunting seen.¹ In Claiborne County they were plentiful, though I did not have an opportunity to observe their nests. Directly across the river in Louisiana they were common almost everywhere and nests were easily found. The male was often caged and known by the foolish name 'pop.'

62. *Spiza americana*. DICKCISSEL.—The Black-throated Bunting, as this bird is also called, was commonly seen. The nests were occasionally found though only two were recorded before the spring of 1900. That spring a large field was located that had been planted in vetch the previous fall and by the first of May a long luxuriant growth completely covered the land. This arrangement evidently appealed strongly to the Dickcissels, for late in April they could be seen in all parts of the field,

¹I have since found the Painted Bunting rather common in Washington County.

and they were singing during most of the day from the rails of the fence that surrounded it. I had collected in this district during the four previous seasons and had never observed one fourth as many of these birds in all as were now to be seen in this single field. How had they located the place and from where had they come? During the month of May fourteen nests were found and at least as many more could probably have been located with careful searching. The nests were placed in clumps of tangled vetch only a few inches above the ground. Eleven sets were composed of five eggs each and three contained four each. They were collected from May 9 to 23, 1900.

63. *Piranga rubra*. SUMMER TANAGER.—These birds seem to have a foolish fancy for building their nests on horizontal branches that overhang roadways. They were rather common and many nests were found each season, fully half of which were placed in trees along the wayside. The male was usually accommodating about leading the collector to his mate's nest, and one with slight experience in observing his antics could go almost directly to the nest tree. The observer finally felt that whenever he heard the male's call during the nesting season a Tanager's nest was soon to be noted. They build a neat home of smooth contour and always lined with a golden yellow grass straw or a similar greenish straw giving to the concavity of the nest a very characteristic appearance; the common 'pepper grass' stems make a favorite material for the outer layer. About one half of the sets contained four eggs while the others contained only three. Some of these eggs are so similar in appearance to those of some Mockingbirds that when a large number of the two kinds are scattered together it is not an easy task to discriminate between them. The earliest set was found April 28, 1896, and the latest June 6, 1900.

64. *Progne subis*. PURPLE MARTIN.—No farm cabin is complete without its martin-box or pole with several gourds strung near the top as nesting places for these birds. They also come to the smaller towns, though they are far less evident during the past several years, as the English Sparrow has usurped most of their breeding places. The eggs are generally deposited in May, and four or five compose the sets. A rather neat nest of sticks and straw is constructed.

65. *Riparia riparia*. BANK SWALLOW.—Along the perpendicular banks of rivers and creeks, in railroad cuts, and in the cliff-like hill sides many of these swallows were found digging their tunnels. They were numerous along the banks of the Tombigbee River where dozens of holes were often seen in a single cliff. They dig their own tunnels and in the back of these their nest of sticks and straw was placed.¹ May and the

¹ On May 2 of this year I found a Bank Swallow's nest placed in a Kingfisher's deserted tunnel. The tunnel was six feet long, and three feet from the entrance it made a bend of 45 degrees, and at this place the swallows had placed their nest.

early part of June constituted the chief laying season, and the sets consisted of four, five, and six eggs. One set of four eggs was taken April 21, 1897, which was the earliest set noted.

66. *Lanius ludovicianus*. **LOGGERHEAD SHRIKE.**—This species is commonly termed 'Butcher-bird,' on account of its well-known murderous reputation. The Shrike's favorite nesting places were orchard trees or the hawthorn bushes of open pastures. The nest was comparatively large and usually composed of a number of different materials but it was almost invariably thickly lined with wool and feathers. The sets contained either five or six eggs, the one number about as often as the other. March 30, 1898, was the earliest date of observing a complete set, and June 2, 1899, was the latest day on which eggs were found.

67. *Vireo olivaceus*. **RED-EYED VIREO.**—The Red eyed was the most plentiful vireo observed, and was usually to be found in all small brakes and woods. The pensile nest was swung from a small fork about ten feet up, though one was situated sixty feet from the ground in the top-most boughs of a gum tree. Three or four eggs constituted the sets. The extreme dates of finding full sets were May 9, 1897, and June 14, 1899. The birds were very shy when nesting. On leaving three partial sets to be completed, after I had merely looked into the nests, all three were deserted. Whenever an unfinished nest was molested in the slightest way, it was abandoned.

68. *Vireo gilvus*. **WARBLING VIREO.**—Only one nest of *gilvus* was seen, and the birds were not at all abundant. The nest was suspended from the prongs of a fork in a small oak sapling, and resembled very closely that of the Red-eyed. It was eighteen feet from the ground and contained a set of four fresh eggs on May 28, 1896.

69. *Vireo noveboracensis*. **WHITE-EYED VIREO.**—This vireo was almost as frequently seen as the Red-eyed. It confines itself, so far as observed, to rather deep woodlands, only in exceptional cases being seen along the roadsides. The nests were found in the low bushes that formed the undergrowth of woods. This nest is never to be confused with that of the Red-eyed by any one who has seen several of each; it is smaller in circumference, though deeper, and has a characteristic color, being composed of special material. The nests were usually placed about waist high. This vireo was also provokingly willing to abandon its home and eggs; whenever the nest was slightly disturbed it was very apt to be deserted, though the bird was apparently not in the vicinity when the offence was committed. Three eggs constituted the sets recorded and all were taken during the month of May.

70. *Seiurus aurocapillus*. **OVEN-BIRD.**—These birds were rare in those portions of Mississippi in which I collected. Only two were seen during the breeding season, though their call was occasionally heard. On May 26, 1895, the only nest was taken. It was constructed of leaves, grass, fibres, and straw, and was almost perfectly roofed over. This structure was placed at the base of a tuft of vines and grass and contained

five fresh eggs. The site was a wooded valley near the foot of a hill in Lowndes County.

71. *Geothlypis trichas*. MARYLAND YELLOW-THROAT. — This was by far the commonest of the few warblers found nesting in the State. Almost every marshy stream had its Yellow-throats. In the tussocks of grasses and rushes its nests were often seen. The nest of grass blades and small straws was tucked down into the center of these tussocks or placed on the ground at the base of such a clump. Many sets were found, all consisting of four eggs, and some were beautifully lined while others were speckled. April 28, 1896, was the earliest date of finding a nest, and in 1900 one was taken as late as May 26 containing a fresh set of four.

72. *Icteria virens*. YELLOW-BREADED CHAT. — Nests of this bird are often found in the edges of sparse woods, along lake banks, and in the bushes of groves. The birds build in blackberry vines or small heavily leaved bushes, and the nest is composed of leaves and grass lined with fine grass straw. All complete sets consisted of four eggs.

In 1900 I noted a very interesting feat on the part of this bird; a similar performance was recorded above for the Blue Grosbeak. May 17 a nest containing four fresh eggs of the Yellow-breasted Chat was found in a hawthorn bush which stood near the edge of a small wood. The nest and set were taken from the bush and added to my collection. On May 26, only nine days later, strange as it may seem, while passing again along this wood border and looking toward the bush that had favored me on the 17th my surprise was to see a chat slide from her nest that now occupied the identical spot from which the other had been removed. This nest also contained a set of four fresh eggs, and it seems as certain as anything could be under the conditions that the same female built both nests and laid both sets. The eggs of the two sets when placed together were indistinguishable, and most observers appreciate the fact that a slight set difference exists among nearly all sets that are laid by different females.

92. *Mimus polyglottos*. MOCKINGBIRD. — No farmyard, garden, or meadow is complete without its pair of these master singers. The Mockingbird is also present in the towns and villages. On summer nights while the moon shines these birds seem to overflow with song, and their vocal performances often continue through almost the entire night; they may also be occasionally heard on perfectly dark nights.

In Mississippi the Mockingbird is sedentary, being present during the entire year. They seem strongly inclined to remain near a nesting site when it has been once chosen, and will often build year after year in the same bush or vine, although none have been found to use a nest for the second season. Six nests of the Mockingbird were once counted in a single large hawthorn bush; one of them contained eggs and the others were in different degrees of dilapidation; they were all probably the work of a single pair. This bird will nest in the vines shading a door or win-

dow and does not seem to object to having its eggs and young closely observed, provided they are not touched. Orchards and roadsides are their favorite nesting places. The nest is rather large and often bulky, the outer foundation consisting of coarse sticks; it is lined with various materials, such as moss, root fibres, etc. In 1902 a Mockingbird's nest was found in a hollow of an old pine stump, the only nest observed in such a place. Several nests were seen placed between the rails of fences and in piles of dead brush.

On May 30, 1897, two nests were found which contained runt or diminutive eggs; one held a single runt and three normal eggs while the other contained three runts about one third the natural size and one normal egg. These nests were in hawthorn bushes on the slope of a hill and not more than twenty-five paces apart. This is singular, since so few runts were seen among the great number of eggs observed.

While noting many Mockingbirds' nests the following happenings were observed:—If a nest and eggs were removed the parents would build another nest and deposit a second set of eggs, while on the other hand, as was seen in several cases, if by some mishap one or several eggs became broken in the nest the birds did not attempt to build or lay again that season, though they remained in the immediate vicinity.

The sets consisted of four or five eggs, and a series of them presented great differences in size, color, and markings. The earliest eggs were seen April 20, 1896, and the latest on June 24, 1899.

74. *Galeoscoptes carolinensis*. CATBIRD. — The Catbird was found more or less abundantly in most parts of the State; some localities, however, seemed entirely without them. In the east central portion they nest in the bushes bordering lakes, and the nests often overhang the water. They also nested in gardens and orchards and at times very near houses. The earliest complete set was noted on May 2, 1900, and the latest on June 17, 1899. All sets contained four eggs.

75. *Toxostoma rufum*. BROWN THRASHER. — This was one of the commonest species observed. They were found in the bushes along the edges of woods, in orchards and along the roadsides. The nests were usually placed in low bushes and vines, but some were high up in trees, and two were found on the ground under the edges of small brush piles. April 21, 1900, the earliest set was noted and June 8, 1899, the latest unhatched eggs were seen. A series of sets from this bird show great variations in their ground color and markings. Four or five eggs composed the sets. In the spring of 1897 a nest of the Mockingbird containing two of its own eggs also contained one egg of the Brown Thrasher.

76. *Thryothorus ludovicianus*. CAROLINA WREN. — More different places were selected by this bird for nesting sites than by any other observed. Nests were noted in tin cans placed under the eaves of sheds, in the eaves of well-houses, between the logs of cotton houses, in the hollows of low stumps, on the timbers under country bridges, between the

logs and weatherboarding of cabins, and strangest of all in the seat of an old pair of hunting trousers that hung on the wall of a farmhouse gallery. The nest was also found in brush piles. The birds were very conspicuous on account of their loud song, but the nest was often difficult to locate even when one was sure of its approximate position. These birds will often lay as many as three sets during one season, and they usually rear two broods within the summer. They are commonly termed in this section 'House Wren,' but of course are not confounded with the true House Wren. April 17 and June 18 are the extreme dates of observing sets. The set number was almost always five, rarely six.

77. *Sitta pusilla*. BROWN-HEADED NUTHATCH.—In the old pine deadenings of Adams County this small bird was found nesting in considerable numbers. They dug their own burrow but it was a badly botched affair, nothing about it suggesting the even smoothness of a woodpecker's hollow. The Nuthatch makes a small entrance through the bark of a dead snag, then usually, rather than burrow into the stump itself, they scooped out an irregular cavity by removing the soft wood that generally lies just under the bark. This burrow ran a crooked course but generally extended ten or fifteen inches below the entrance. In this cavity they placed a nest of soft fibers, moss, feathers, cotton, and wool. The burrows were usually only a few feet from the ground but one was found twelve feet up. The nests were best located by pulling the bark from pine stumps in a deadening where the birds were seen to be plentiful, unless one chanced to see them building or entering their burrow. On one occasion when the bark was pulled away exposing a nest while the female sat upon it, she could not be made to leave until pushed off with my finger.

These tiny birds are early layers, nesting at the time when the hawks, owls, and crows do. March 17, 1902, the earliest set was taken and the latest eggs were found on April 19. Sets consisted of five eggs.

78. *Parus bicolor*. TUFTED TITMOUSE.—Around the edges of woods, in deadenings, and often in groves the Tufted Titmouse was a common bird. The nests were found in natural cavities and in the deserted burrows of woodpeckers. This species, the Brown-headed Nuthatch, and Carolina Chickadee were often found nesting in the same vicinity, probably because they all select similar trees and stumps as homes. In the nest building of the Titmouse were used such materials as leaves, moss, fibrous bark, feathers and hair. The sets were composed of five and six eggs. On April 20, 1901, the earliest set was taken, and May 22, 1903, was the latest date on which eggs were found.

79. *Parus carolinensis*. CAROLINA CHICKADEE.—This bird nested in natural cavities and in the burrows of the smaller woodpeckers. The favorite sites were old fence posts which so often contain hollows. By walking along a line of posts in the country districts one seldom fails to find a Chickadee's nest. They also nested in deadenings where hollows were plentiful. All of the nests were composed partly of green moss,

other ingredients being feathers, cotton, wool, and fibers. Most sets contained five eggs but six were not uncommon, and Mr. R. P. Gillespie took a set in Oktibbeha County that contained nine,—these are now in a collection at the State Agricultural College. Most eggs were found during the month of April, and after the first of May nearly all nests contained young.

80. *Poliophtila cærulea*. BLUE-GRAY GNATCATCHER.—Although this bird was often seen in most woods only two of its nests were found. The nests were composed of sycamore fuzz and other plant down, some hair, and small feathers as lining, while the outer part was almost completely covered with lichens so as to resemble very closely a mossy tree knot. The first nest was taken May 16, 1897, from an old honey locust tree near the edge of a wood. The second nest was found May 9, 1902, in another locust tree which was located in a small grove seventy yards from a college dormitory. Both sets contained four eggs.

81. *Turdus mustelinus*. WOOD THRUSH.—This handsome thrush was found rather abundantly in most low woodlands as well as in the yards of the towns. The nests were found placed on horizontal branches, often a considerable distance from the tree trunk. The outer wall of the nest was composed of sticks and leaves, which were plastered inside with a heavy layer of mud, the mud was then covered with fine fibrous roots as a nest lining, but these were often so thinly laid on that the mud was visible over almost the entire nest floor. Some sets had three eggs and others four. May 4, 1900, was the earliest set date and May 27, 1897, was the latest; most sets were taken about May 10.

82. *Merula migratoria*. AMERICAN ROBIN.—I have never observed this bird in Mississippi during the breeding season, though a collector in the northern part of the State once showed me a set of four Robin's eggs that he claimed to have collected in the county that year.

83. *Sialia sialis*. BLUEBIRD.—Bluebirds were found nesting in many kinds of cavities; the strangest nesting site observed was the hollow iron coupling of a flat car which stood for many weeks on a side track. The old style link and pin couple had a long hollow iron neck and back; in this neck a Bluebird had built its nest and deposited a set of five eggs. These birds lay several sets during the season if their eggs are taken away, and will often complete the set if the eggs are removed one by one. Sets of pure white eggs were observed on two occasions. On March 29, 1902, the earliest sets were taken and June 3, 1896, was the latest, this being a second set of the season. The number of eggs laid was either four or five.

The notes recorded above, with those which appeared under a similar title in the April number of this journal, may be conveniently summarized in the table below. The full meaning of the columns is to be understood as follows: The *number* refers to

the number placed before the name of the same species in the above articles; the *species* is given by the common name; under *occurrence* three terms are used: common — indicating that the bird was abundant and readily found; casual — birds not popularly known though not really rare; rare — birds that were seldom seen and few nests found; under *nest location* will be given the general character of the vicinity in which the nests were usually built; *earliest date* indicates the earliest date of the season on which I recorded nests of the given species; *latest date* the other extreme date; *maximum date* means the season during which most eggs of the species were to be found; *number of nests* is self-explanatory, but I may add that in several cases of the common species this number does not represent all the nests seen but only those specially observed.

No.	Species.	Occurrence.	Nest-location.	Earliest date.	Latest date.	Maximum date.	No. of nests.
1	Pied-billed Grebe	Common	—	—	—	—	—
2	Royal Tern	Common	Sandy islands	May 28	June 21	June	18
3	Cabot's Tern	Common	Sandy islands	May 28	June 21	June	16
4	Anhinga	Common	Swampy woods	Apr. 21	May 14	Apr. (late)	22
5	Least Bittern	Rare	—	—	—	—	—
6	Louisiana Heron	Common	Marshes	May 11	June 12	May	29
7	Little Blue Heron	Common	Marshes	Apr. 13	June 4	May	24
8	Green Heron	Common	Stream banks and marshes	May 5	June 11	May (late)	14
9	Black-crowned Night Heron	Casual	Marshy woods	Mar. 21	May 11	Apr.	13
10	King Rail	Rare	Reeds in marsh	June 29	—	—	1
11	Clapper Rail	Casual	Reeds in marsh	May 28	—	—	1
12	Sora	—	—	—	—	—	—
13	Spotted Sandpiper	Rare	—	—	—	—	—
14	Killdeer	Common	Open fields	Apr. 17	June 6	May	31
15	Bob-white	Common	Hay fields	June 3	June 29	June	42
16	Wild Turkey	Casual	Woods	May 14	May 26	May	2
17	Mourning Dove	Common	Pastures and hedges	May 1	June 19	May	51
18	Turkey Vulture	Common	Deep woods	Mar. 21	Apr. 25	Mar. (late)	5
19	Black Vulture	Common	Deep woods	Mar. 11	Apr. 19	Mar. (early)	13
20	Cooper's Hawk	Common	Deep woods	Mar. 2	Apr. 5	Mar. (mid.)	11
21	Red-tailed Hawk	Common	Deep woods	Mar. 3	Apr. 24	Mar. (mid.)	8
22	Red-shouldered Hawk	Common	Deep woods	Mar. 6	Apr. 18	Mar. (late)	15
23	Broad-winged Hawk	Rare	Open pasture	Apr. 4	Apr. 13	—	3
24	Bald Eagle	Casual	—	—	—	—	—
25	American Sparrow Hawk	Common	Edges of woods	Mar. 18	Apr. 2	Mar. (late)	9
26	Barred Owl	Common	Deep woods	Feb.	Mar. 11	Feb.	8
27	Screech Owl	Common	Old fields	Mar. 14	May 3	Apr. (early)	17
28	Great Horned Owl	Rare	—	—	—	—	—
29	Yellow-billed Cuckoo	Common	Groves	May 5	June 21	May (late)	39
30	Belted Kingfisher	Common	Cliffs and stream banks	Apr. 28	June 7	May (early)	14

No.	Species.	Occurrence.	Nest-location.	Earliest date.	Latest date.	Maximum date.	No. of nests.
31	Ivory-billed Woodpecker	Casual	Edge of woods	Apr. 20	May 18	Apr. (late)	7
32	Downy Woodpecker	Casual	Woods	Apr. 1	May 8	Apr. (early)	17
33	Pileated Woodpecker	Common	Fields and pastures	May 12	June 14	May (late)	62
34	Red-headed Woodpecker	Common	Edge of woods	Apr. 24	June 2	Apr. (late)	20
35	Red-bellied Woodpecker	Common	Fields and pastures	Apr. 12	June 4	May (early)	65
36	Flicker	Common	Deep woods	May 3	May 23	May (mid.)	4
37	Chuck-will's-widow	Common	Fields and pastures	May 5	June 2	May (mid.)	10
38	Nighthawk	Common	Chimneys	May 15	June 17	May (late)	23
39	Chimney Swift	Common	Groves	May 9	May 14	May (early)	2
40	Ruby-throated Hummingbird	Common	Fields and pastures	May 10	June 13	May (late)	47
41	Kingbird	Common	Roadsides and edge of woods	Apr. 28	May 27	May (mid.)	23
42	Crested Flycatcher	Casual	Sparse woods	May 17	June 19	May (late)	11
43	Wood Pewee	Casual	Deep woods	May 4	June 19	May (late)	7
44	Green-crested Flycatcher	Common	Various	Mar. 29	June 5	April	149
45	Blue Jay	Common	Pine woods	Mar. 9	Apr. 22	Mar. (mid.)	42
46	American Crow	Common	Marshes and orchards	May 12	June 27	June (early)	118
47	Red-winged Blackbird	Common	Fields	Apr. 26	June 7	May (mid.)	29
48	Meadowlark	Common	Groves	May 4	June 8	May (mid.)	40
49	Orchard Oriole	Casual	Groves and fields	May 5	May 26	May (mid.)	23
50	Baltimore Oriole	Common	Marshes	May 3	June 6	May (mid.)	47
51	Purple Grackle	Casual	Various	—	—	—	14
52	Boat-tailed Grackle	Common	Various	—	—	Almost entire year	318+
53	English Sparrow	Common	Various	—	—	May	19
54	Chipping Sparrow	Casual	Pastures	May 7	June 10	Apr. (late)	32
55	Field Sparrow	Common	Fields	Apr. 14	May 21	—	1
56	Bachman's Sparrow	Rare	Edge of wood	May 14	—	—	12
57	Towhee	Casual	Thickets	May 6	June 6	May (mid.)	93
58	Cardinal	Common	Various	Apr. 8	May 26	May (early)	7
59	Blue Grosbeak	Casual	Edge of woods	May 9	June 1	May	7

No.	Species.	Occurrence.	Nest-location.	Earliest date.	Latest date.	Maximum date.	No. of nests.
60	Indigo Bunting	Casual	Fields and woods	May 6	June 9	May (mid.)	9
61	Painted Bunting	Rare	_____	Apr. 28	June 6	May (early)	23
62	Summer Tanager	Casual	Roadsides	May 9	May 23	May (mid.)	16
63	Dickcissel	Casual	Hay fields	May 2	May 23	May	51
64	Purple Martin	Common	Martin houses	Apr. 21	June 12	May	30
65	Bank Swallow	Common	Cliffs and banks	Mar. 30	June 2	April	48
66	Loggerhead Shrike	Common	Pastures and orchards	May 9	June 14	May (late)	19
67	Red-eyed Vireo	Rare	Woods	May 28	May 29	May	1
68	Warbling Vireo	Common	Woods	May 10	May 29	May	13
69	White-eyed Vireo	Rare	Woods	May 26	May 26	May (early)	1
70	Oven-bird	Common	Wood edges	Apr. 28	May 26	May	20
71	Maryland Yellow-throat	Casual	Marshes	May 6	May 26	May	10
72	Yellow-breasted Chat	Common	Wood edges	Apr. 20	June 24	May (mid.)	135+
73	Mockingbird	Common	Various	May 2	June 17	May (late)	31
74	Catbird	Common	Thickets	Apr. 21	June 8	May (early)	81
75	Brown Thrasher	Common	Thickets	Apr. 17	June 18	May (early)	59
76	Carolina Wren	Casual	Various	Mar. 17	Apr. 19	Apr. (early)	9
77	Brown-headed Nuthatch	Casual	Pine deadenings	Apr. 20	May 22	May (early)	11
78	Tufted Titmouse	Common	Near wood edges	Mar. 30	May 2	Apr. (mid.)	18
79	Carolina Chickadee	Rare	In fence posts	May 9	May 16	May (mid.)	2
80	Blue-gray Gnatcatcher	Casual	Groves	May 4	May 27	May (mid.)	15
81	Wood Thrush	Common	Woods and groves	Mar. 29	June 3	Apr. (late)	89
82	American Robin	Common	Various hollows	_____	_____	_____	_____
83	Bluebird	Common	_____	_____	_____	_____	_____

WARBLER MIGRATION IN SOUTHEAST LOUISIANA
AND SOUTHERN MISSISSIPPI.

BY H. H. KOPMAN.

AS APPLIED to the conditions of bird migration in this vicinity, some of the deductions and generalizations made by Professor Cooke in his extremely interesting and instructive report on the 'Distribution and Migration of North American Warblers,'¹ give a slightly incorrect and incomplete view of the actual conditions of warbler migration in southeastern Louisiana and the middle Gulf coast of Mississippi. It should be said at the outset, however, that the records from which Professor Cooke drew, contributed by Andrew Allison and the writer, were circumscribed in many instances, owing to our imperfect opportunities for observation. It is not surprising, therefore, that in some cases our reports to the Biological Survey have failed to convey to Professor Cooke the real significance of the state of affairs to be exploited. The reports were in the nature, chiefly, of a series of categorical answers to categorical questions. It was unavoidable, therefore, that in many instances, the part of Professor Cooke's book relating to this locality and section should fail as to a precise definition of conditions.

Before taking up *ad seriatim* the species of warblers whose status in the above mentioned districts Professor Cooke has not made perfectly clear, I will touch upon two points of general application. The first concerns a mistake that would be made by anyone who had never visited this section of the country.

In the districts under consideration, there are two principal points from which we sent the reports that Professor Cooke used. One is Bay St. Louis, Miss., and the other is New Orleans. In many cases what might be said of a species at New Orleans would be true for that species at Bay St. Louis, for the latter point is only fifty miles east of New Orleans, and less than half a degree north. But on the other hand, assertions that fit some species at

¹ Bulletin No. 18, U. S. Department of Agriculture, Division of Biological Survey, 1904.

New Orleans are entirely inapplicable to the same birds as occurring in the piney country about Bay St. Louis. Species that arrive in numbers and with regularity at both places in spring and fall arrive at practically identical times, but there is a considerable number of birds which will be found in important numbers at one of these points at one season and not be found at the other. And this difference is of much more significance than might seem at first. New Orleans is on a rather low, alluvial plain, a country in large part swampy, with few characteristic tree growths except the water oak, the live oak, the tupelo gum, and the bald cypress. Bay St. Louis, on the other hand, is about fifteen miles east of the western limit of the piney belt in its coastward extension (the delta and immediate valley deposit of the Mississippi covering the lands about New Orleans that otherwise would be pine-bearing). Bay St. Louis, moreover, is on rather high ground, completely of white sand and red and yellow clay formations, and has a highly characteristic tree and shrub flora, of which the pines are most conspicuous. It can be seen, therefore, that many important distinctions in the avifauna are to be found when we compare the two districts. Some birds that migrate with regularity through the country about Bay St. Louis in spring, put in an appearance at New Orleans only occasionally, and *vice versa*. In the present instance, the trouble is that by far the larger part of the data have come from New Orleans, and the Bay St. Louis data, especially in regard to spring, have been used to supplement our reports for the New Orleans district. But the story of the migrations told us by the New Orleans records, is much more than supplemented, in many cases, by the observations made on the Mississippi coast. There are things brought out in the records from that district which we should never have discovered from the returns at New Orleans. In other words, the Bay St. Louis district is part of a distinct faunal area, and in its bearings to migration as well as to every other phase of bird-life, should be treated as such.¹

¹ Some of the differences between the avifauna of the fertile alluvial of southeast Louisiana and that of the pine districts to the north and east in Louisiana and Mississippi were pointed out by me in an article in 'The Gulf Fauna and Flora Bulletin,' Vol. I, No. 2.

The second point, and it is a matter upon which much difference of opinion might readily exist, concerns Professor Cooke's method of finding the average date of first arrival in spring. To add the number of days intervening each year between the first of the month in which the earliest record falls and the day of arrival for the year in question, and then to divide by the number of records, may be the best method to find the average date of arrival where the seasons are very consistent and regular; but in a region where there is occasionally a peculiarly abnormal year, the use of the record for such years vitiates the determination of the normal or typical time of arrival. Again, this is a matter that can be settled for any one region only by those who are on the ground all the time, and can use judgment in selection. The very late dates occasioned by late blizzards have been used by Professor Cooke in finding the average dates of arrival for this latitude. The records themselves do not in every case reflect the true state of affairs for certain seasons, because opportunities for observation in some of such years were limited, and the best date obtained was sent, though it might be known to be a late date. The necessary notes to that effect, it is true, were not appended in all cases. These circumstances aside, however, in this latitude at least, the average date of arrival in spring is the average of all records for normal seasons, though this statement applies better of course to the early part of the season, since a season rapidly catches up time once it has a good headway. It should be added that it would be as much of a mistake to include the date of arrival for one of our extremely forward springs as the date in a spring delayed by a blizzard. Including both extremes, one might expect to come reasonably near the practical rather than the ideal average, but in one case at least, that of the Hooded Warbler, Professor Cooke's method carries us considerably astray. The date upon which the Hooded Warbler appears most likely to arrive in a normal season is March 12. Professor Cooke, however, using the records available to him, determines the average date of arrival at New Orleans to be March 25. If one had a very full and trustworthy record, would not the best method, after all, be to settle upon that date which occurs most frequently? In the case of many species there would certainly be such a date.

This seems a more natural method than striking an ideal average date upon which the species may never have arrived!

1. BLACK-AND-WHITE WARBLER.—Professor Cooke calls attention to the lateness of the spring arrival of this species in southern Louisiana, where it is common only in fall. It is much commoner in spring at Bay St. Louis, and doubtless usually arrives there about March 20, the date on which Professor Cooke would expect to find it. We have but one complete spring record from Bay St. Louis; this is for the year 1902, and shows that the first Black-and-white Warbler came March 15, the next March 24, while the bulk of transients arrived April 10. The birds seen at New Orleans usually belong to the last designation, and that is the reason the arrival at New Orleans nearly always seems so much delayed, if it is detected at all. Professor Cooke thinks that the reason the Black-and-white Warbler usually delays its uncertain appearance at New Orleans is because the first migrants seek higher ground. The early arrival of the species on the coast of Mississippi shows, however, that this is only partly true; the difference in the character of the growth appears to explain the phenomenon, though, of course, this difference is partly associated with the altitude. Moreover, the Black-and-White Warbler was observed at New Orleans, Mar. 19 and 20, 1905.

2. PROTHONOTARY WARBLER.—Professor Cooke gives the average date of arrival at New Orleans as March 18. This is about as near the truth as one can come. It might be said that in normal seasons they would always be found by March 20, and not infrequently from one to three days earlier. In fact, there is a record of March 13, another of March 15, while twice the first has arrived March 19.

3. SWAINSON'S WARBLER.—Since the publication of Professor Cooke's book, we have established Louisiana records considerably earlier than any available to him when he was at work on his report. April 1, 1904, we heard about four in Jefferson Parish, opposite New Orleans, in a cane brake in thick, moist woodland where the species had been observed in April during several springs. On this occasion we took a specimen; several other specimens had been taken previously. It is not unlikely that the

birds seen April 1 had arrived with a general wave on March 30, and I observed the first, a single bird, on the latter date in 1905.

So far we have been unable to prove more than the fact that Swainson's Warbler is a regular transient in these woods, where we have seen it every spring we have looked for it since it was discovered there by A. B. Blakemore, April 11, 1896.

4. WORM-EATING WARBLER.—At New Orleans this species is decidedly rare, especially in spring. It is more common at points in the pinewoods north and east. Professor Cooke's quotations from our records apply chiefly to Covington and Bay St. Louis.

5. BACHMAN'S WARBLER.—In addition to the records cited, Andrew Allison saw one at Lobdell, West Baton Rouge Parish, La., May 9, 1903.

6. TENNESSEE WARBLER.—Our later records throw some little light upon the spring migration of this bird through southern Louisiana and Mississippi. In a small lot of warblers sent Andrew Allison, in the spring of 1902, from the lighthouse on Chandeleur Island, off the southeast coast of Louisiana, was a Tennessee Warbler that had struck the lighthouse April 13. While I had some dubious records of the occurrence of the Tennessee Warbler at New Orleans in the early part of April, it was not until 1903 that I saw the species, in spring, and then in some numbers, singing, and loitering to a degree that surprised me, for the first of these transients appeared April 26, and the last was noted May 9. They were restricted almost to one spot, a thicket of willows beside a pond in the suburbs of New Orleans. I observed others the latter part of April, 1905.

I once saw a specimen of a Tennessee Warbler that had been taken by H. W. Pring, in St. James Parish, fifty miles west of New Orleans, in March, but the exact date could not be supplied. The bird was killed probably about the 20th.

7. PARULA WARBLER.—It is deduced from the records furnished that the average date of arrival in spring is March 5, and the average time of first abundance is March 14. Practical experience here, however, suggests that the state of affairs would be slightly better indicated by approximating these two dates. One may always be fairly sure of seeing the first Parula at New Orleans March 7, while the species is usually abundant within three or four days.

8. **YELLOW WARBLER.**—There is undoubtedly a very restricted spring movement of this species, earlier than that which the majority of our records show. Dates of arrival as early as April 1 are rare, April 6, as Professor Cooke shows, being the average date when the first bird has been seen. However, in 1904, in the course of a twenty mile trip, March 30, I came across a single Yellow Warbler. Passing the same way the first of April, I found the bird still there. Ordinarily, one thinks to have done well in seeing this species at New Orleans or anywhere in that neighborhood, by April 3 or 4.¹

9. **BLACK-THROATED GREEN WARBLER.**—Professor Cooke is inclined to think that a specimen of this bird taken at Beauvoir, Miss., July 30, 1897, was an individual that had gone astray, and all the evidence of the fall migration of the species elsewhere supports his view. I am inclined to think, however, that parallel cases could be found, for while I positively recorded but one individual on the date mentioned, shooting that bird, which was an immature male, I saw several other birds that seemed to be of the same species. Furthermore, about July 23, 1896, in Madison Parish, northeastern Louisiana, I saw some birds that I feel well assured were Black-throated Green Warblers, but circumstances prevented a chance for either critical observation or identification by shooting. While the fall migration of the Black-throated Green Warbler appears to be much later, on the whole, than that of the Blackburnian, Bay-breasted, Cerulean, etc., I believe opportunities for further investigation of early migration on the Gulf coast might justify the belief that the Black-throated Green Warbler shares to a considerable extent in this early southward migration.

¹ It might be added here that what has been said of the Yellow Warbler applies to a large number of birds migrating through southeast Louisiana, or appearing there even as summer visitors. So often the first record of a bird, even after one has covered much territory, will be of a single individual, instead of the three or four, at least, that one might have expected to find. While this feature could hardly be called characteristic of this region, it is very noticeable, and because of it, a peculiar difficulty attaches to the collection of migration data here. It may be partly explained by the sameness of the country, so that the first arrivals are widely dispersed instead of being congested in some favorite localities.

10. PRAIRIE WARBLER.—Although the name of this species appears but a few times in our records, a fact noted by Professor Cooke, this was because it was observed only occasionally as an early migrant on the Mississippi coast, July 22, 1902, at Bay St. Louis, and July 28, 1897, at Beauvoir. Later in the summer, it has been seen on various occasions, and is by no means rare in the pine woods of southern Mississippi.

11. LOUISIANA WATER-THRUSH.—The records from this region available to Professor Cooke contained no instance of early arrival of this species in southern Louisiana, but March 19, 1904, I saw a single bird. This record makes it easier to understand the early arrival of the species at St. Louis, where Mr. Widmann has found it by March 29. Even so, our best date seems very late.

12. YELLOW-BREASTED CHAT.—While I was formerly inclined to agree with the opinion of Professor Beyer, quoted by Professor Cooke, that the Chat never reaches our district before the middle of April, having more recently seen the bird as early as April 11 (1903), I am inclined to think that in forward seasons at least, it is not so late a migrant as we had supposed.

13. HOODED WARBLER.—As before noted, the deductions made in regard to the arrival of the Hooded Warbler at New Orleans are considerably astray. March 12 is a normal time of arrival, and by March 25 it is nearly always abundant. The reason Professor Cooke has misunderstood the New Orleans records relating to this species is that some of them were for blizzard seasons, while others were made in seasons when opportunities for observation were limited. There is this, however, to be noted of the arrival of the Hooded Warbler in this section, that it comes much earlier at New Orleans and in identical country of southeast Louisiana, than at points in the pine woods or in some of the higher alluvial lands west of New Orleans, in other words, further up the river. This is no doubt because the species is so highly typical of the extremely low and wet alluvial lands of the southeastern corner of the State, and the legion breeding birds come to their stands there before the transients and smaller number of breeding birds have arrived at the higher lands. This is just the reverse of the case of the Black-and-white Warbler, for

the earliest birds of that species, transients in our latitude, pass hurriedly, and stop only in such kinds of country as most resemble their ultimate destination. In other words, as a general rule, their occurrence in the State in spring becomes extended from the higher lands to the lower as the season advances.

THE WINTER RANGES OF THE WARBLERS (MNIOTILTIDÆ).

BY W. W. COOKE.

MANY expert ornithologists have spent a great deal of time and care in working out the breeding range of each species of North American birds. No comparable effort has been bestowed on the question of the winter home, and as a result many loose statements are current in ornithological literature. There seems to be a tendency to consider any record south of the United States as a wintering record, whereas quite a number of species pass in migration through the West Indies or Central America to winter in South America.

The following tables show at a glance what part of the district south of the United States is occupied as a winter home and what is crossed in migration. It might be added that the charts are not designed to show anything with reference to the breeding range of any of these species; so that the statement, for instance, that *Protonotaria citrea* occurs in migration in the southeastern United States is not to be taken as indicating that it does not breed in that same district.

The tables are condensed from the Bulletin on the 'Distribution and Migration of North American Warblers' recently issued by the Biological Survey.

THE PURCHASE OF A GREAT AUK FOR THE
THAYER MUSEUM AT LANCASTER, MASS.

BY JOHN E. THAYER.

(*Plates XIII and XIV.*)

THROUGH Mr. Rowland Ward of London I have had the good fortune to purchase a Great Auk (*Plautus impennis*) and three eggs. The following is an account of the bird and eggs.

MOUNTED BIRD.

This specimen was bought for Viscount Hill's Hawkstone collection in 1838 from Gould, the Naturalist, and was first mentioned by the late Mr. R. Champley of Scarborough in the 'Annals and Magazines of Natural History,' 1864, Vol. XIV, page 235. The Hawkstone collection was sold to Mr. Beville Stanier, who has a collection of birds of his District. A Great Auk not consistently belonging to a local collection, he decided to sell it and it was purchased through Rowland Ward of London for the Thayer Museum.

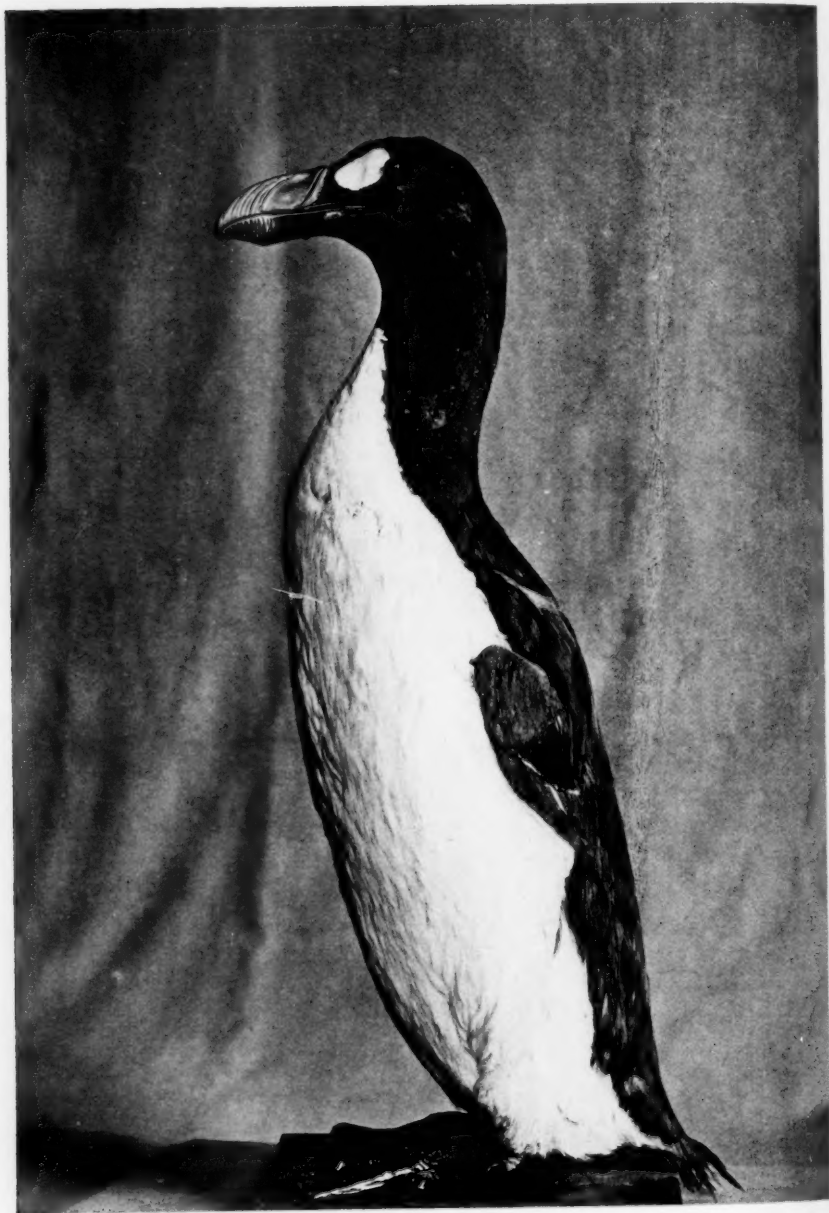
The following is taken from the Hawkstone catalogue,—“This Bird was re-set up by H. Shaw in 1867, and is supposed to be the best specimen in existence.”¹

THE THREE EGGS.

These eggs came from the collection of Mr. Robert Champley of Scarborough, England. He had nine Great Auk eggs, which were acquired by him in 1864 and a few years preceding that date.

Three of these came from the Royal College of Surgeons, London. Two of these eggs, No. 7 and 8, are the ones I bought. My other egg, Mr. Champley bought in Paris.

¹ It would be better to say “one of the best” instead of “best,” although it really is a magnificent specimen.



GREAT AUK (*PLAUTUS IMPENNIS*).
In Collection of Hon. John E. Thayer, Lancaster, Mass.

In Symington Grieve's book, 'The Great Auk or Garefowl. Its History, Archæology and Remains,' there appears the following: "On the 11th of July, 1865, there was sold at Steven's Sale Rooms, London, four Great Auk eggs, that were part of the splendid set of ten eggs discovered in the Museum of the Royal College of Surgeons. The prices they fetched were 33£, 31£-38 s, and two 29£ each." As it may be interesting for our readers to have some further information about these eggs, we may state, that in a footnote on page 483 of 'The Garefowl and its Historians' (Nat. Hist. Review, 1865), Professor A. Newton mentions that a few years prior to that time there was found in the Royal College of Surgeons, London, by the late Curator, Mr. Stewart, a box with the words, "Penquin Eggs — Dr. Dick." Of when or how they came into possession of the establishment there was no record.

The box contained ten matchless Great Auk eggs, which were recognized by Professor A. Newton, and from the name Penquin being on the box he supposed them to be of American origin.

The collection appears to have been unique and unrivalled, and to all interested in such remains invaluable for comparison. The authorities of the Royal Museum were evidently unappreciative of them, for it is stated that they disposed of some without even taking casts or photographs. From a letter which Mr. J. C. Stevens, the Auctioneer, wrote to Mr. Champley, dated 14th of July, 1865, we get the following information: Lot 140 sold for 29£, Lot 141 for 33£. Lot 142 for 31£-10 s. Lot 143 for 29£.

In addition to the above four eggs of which we have given the sale prices, three others from the same collection were sold privately to Mr. Champley.

Egg No. 6 (Plate XIV, lower figure) was bought from Mr. Ward of London, who got it from Mr. Fairmaire, a dealer in Zoölogical wares in Paris. Mr. Ward sold it to Mr. Champley. Size $4\frac{7}{8}$ inches long, 3 inches broad. It has a ground color of dirty white, beautifully marked all over with black and brown spots. In Grieve's list of Great Auk's eggs this is No. 61 (see Grieve, page 33, appendix).

Egg No. 7 (not figured) was bought through the agency of Professor Flower from the Royal College of Surgeons by Mr.

Champley. Size $4\frac{3}{4}$ inches long and $3\frac{1}{4}$ broad. Dark yellow markings, all at the thick end (Grieve, No. 63, page 33, appendix).

Egg No. 8 (Plate XIV, upper figure) was bought from the same. Size $4\frac{3}{8}$ inches long and $2\frac{7}{8}$ broad. Ground color dark yellow, marked all over (Grieve, 65, page 34, appendix).

These eggs are all in good condition, but of course end blown and the holes seem large in comparison to the way eggs are blown to-day.

ORNITHOLOGY OF A CHURCHYARD.

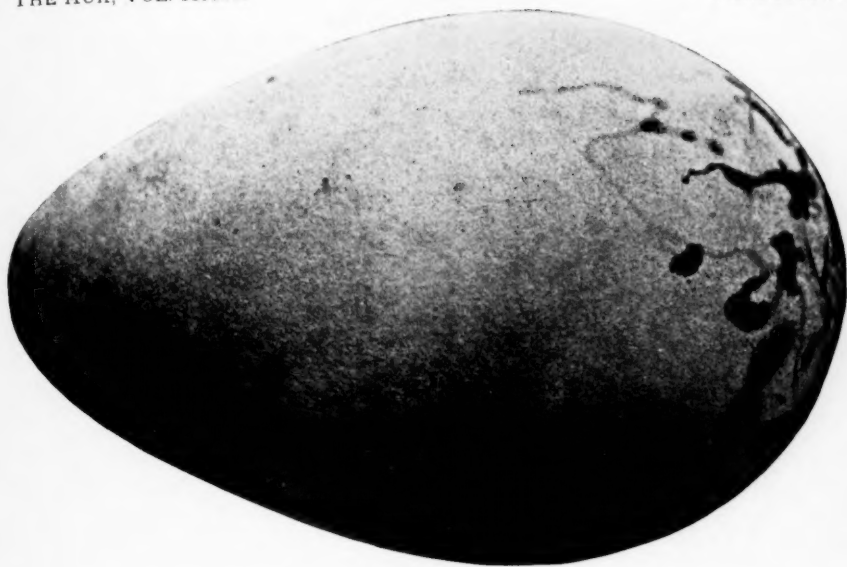
BY B. S. BOWDISH.

EVEN under unpromising conditions, and in unexpected places, there is often something for the bird-student to investigate. This is illustrated by some surprising records from city parks, and even from the smaller green spots, oases in the great desert of brick and mortar.

As such a record I here submit for whatever it may be worth, the results of observations in Saint Paul's Churchyard, New York City, made mostly during intervals of a few moments at noon, and occasionally in the morning, and covering the migration periods of spring and fall of 1903, and spring of 1904.

Saint Paul's Church property is situated nearly midway between the East and North Rivers, fronting east on Broadway, Church Street at the rear, Vesey Street on the north side and Fulton Street on the south, and it is thus in one of the busiest and noisiest sections of the city.

At the rear of the property, along Church Street, there is the constant rumble and roar of the elevated railroad. This church property is about 332 feet long by 177 feet wide, of which area the church occupies a space about 78 by 120 feet at the Broadway end, while at the Church Street end the Church School takes off another slice about 30 feet wide. The space remaining consists of the main yard at the rear of the church, between it and the



EGGS OF THE GREAT AUK.

In Collection of Hon. John E. Thayer, Lancaster, Mass.



school, and a wing on either side of the church, each about 120 feet long by 48 feet wide. A narrow walk completes the circuit of the churchyard, about twenty feet from its outer edge. The grounds contain three large, ten medium, and forty smaller trees, not counting several that were being removed at the time of my count, and a number of shrubs and flowers, grass-plots and grass-grown graves. Even the most nerve-hardened native bird would hardly select such a spot for a summer home, nor attempt to take up winter quarters there.

Throughout the greater part of the summer and winter the noisy flock of English Sparrows domiciled here holds undisputed sway. It seems probable that the native birds that occur in the churchyard during migrations are such as are attracted to the green spot while passing in their flights directly over it, and that they are in no case stragglers from the temporary residents of the near-by country or parks. I have visited the churchyard many times in summer and winter, and during these periods between regular migratory seasons, I have yet to see or hear of the occurrence of a native bird. I have no spring record later than May, and no fall record after November, save the one of the Tree Sparrow, December 8, in which case it could not be fairly said that the season of migration was past.

From my data I am inclined to believe, too, that the bird movement of this very restricted area reflects, in a small way, that of the outside country. When the greatest number of birds was seen in the churchyard, it generally transpired that a bird-wave was on in the country just outside the city, which was also reflected in Central Park.

Misfortune is said to make strange bed-fellows, and certainly migration produces unexpected incongruities between birds and environment. Species whose sociability about the homes of man in the country would lead one to expect them to be among the first and most common to occur in the city parks and green spots, seem in many cases to be strangely wanting in the records for such places, while others of notably retiring habits, surprise one by their unexpected appearance in the crowded marts of civilization. The Woodcock has been recorded on the lawn of the American Museum of Natural History and in Trinity Churchyard, while

my Saint Paul's records of Song and Chipping Sparrows, Robin, Yellow Warbler, and some other of our more familiar birds are surprisingly few. According to the indications of the three seasons covered by my observations, the Yellow-bellied Sapsucker appears to be a regular visitor, which seems rather surprising.

Observations covering the period from the first to the last record were: for 1903, spring, 5 days, no birds; 19 days, 18 species, 59 individuals: total, 24 days; fall, 25 days, no birds; 47 days, 26 species, 187 individuals: total 72 days. For 1904, spring, 7 days, no birds; 24 days, 22 species, 87 individuals: total 31 days. Total for three seasons of observation: 37 days, no birds; 90 days, 40 species, 328 individuals, 117 days observation. This gives an average of one bird in 2.25 days, and of 3.64 individuals per day of observation.

The list of birds noted is as follows:

Yellow-bellied Sapsucker, 5 records, — 1903, April 29, 1; Sept. 25, 1; Oct. 12, 2; Oct. 22, 1; 1904, April 6, 1; total, 6.

Red-bellied Woodpecker, 1 record, — Oct. 1, 1903, 1.

Phœbe, 3 records, — 1903, Sept. 12, 1; Sept. 25, 1; Oct. 15, 1; total, 3.

Least Flycatcher, 5 records, — 1903, May 19, 3; May 22, 1; Sept. 24, 1; Sept. 25, 1; 1904, May 13, 1; total, 7.

White-crowned Sparrow, 2 records, — 1904, April 25, 2; April 26, 2; total, 4 (probably only two birds).

White-throated Sparrow, 16 records, — 1903, May 1, 1; May 16, 1; May 18, 1; May 20, 1; May 26, 1; May 28, 1; Sept. 24, 1; Sept. 26, 1; Sept. 30, 1; Oct. 19, 2; Oct. 23, 1; Oct. 24, 1; 1904, April 25, 2; April 26, 3; May 10, 1; May 11, 1; total, 19.

Tree Sparrow, 1 record, — Dec. 8, 1903, 1.

Chipping Sparrow, 6 records, — 1903, May 11, 1; 1904, April 18, 2; May 3, 1; May 9, 1; May 11, 1; May 12, 1; total, 7.

Field Sparrow, 5 records, — 1903, Oct. 8, 1; 1904, April 18, 1; April 28, 1; April 29, 1; May 2, 1; total, 5.

Slate-colored Junco, 24 records, — 1903, April 29, 1; Sept. 26, 1; Sept. 29, 2; Sept. 30, 3; Oct. 2, 1; Oct. 3, 1; Oct. 12, 1; Oct. 13, 1; Oct. 14, 1; Oct. 22, 3; Oct. 23, 1; Oct. 24, 1; Oct. 26, 3; Oct. 27, 2; Oct. 28, 2; Oct. 29, 6; Oct. 30, 1; Oct. 31, 5; Nov. 2, 1; Nov. 5, 1; Nov. 6, 1; Nov. 10, 1; Nov. 16, 1; 1904, April 30, 1; total, 45.

Song Sparrow, 1 record, — April 30, 1904, 1.

Towhee, 7 records, — 1903, May 1, male; May 6, male; May 7, female; Oct. 3, female; 1904, May 5, female; May 10, 2 females; May 13, male; May 16, female; total, 9.

Indigo Bunting, 1 record, — May 12, 1904, bright male.

- Scarlet Tanager, 1 record,— May 14, 1904, male.
 Red-eyed Vireo, 2 records,— 1904, May 12, 1; May 13, 1; total, 2.
 Blue-winged Warbler, 2 records,— 1903, Sept. 8, 1; Sept. 25, 1; total, 2.
 Parula Warbler, 1 record,— May 5, 1904, 1.
 Yellow Warbler, 3 records,— 1903, May 19, 1; May 22, 1; Sept. 4, 1; total, 3.
 Black-throated Blue Warbler, 1 record,— Oct. 22, 1903, 1.
 Myrtle Warbler, 1 record,— Oct. 13, 1904, 1.
 Magnolia Warbler, 1 record,— May 20, 1903, 1.
 Palm Warbler, 1 record,— Oct. 13, 1903, 1.
 Ovenbird, 11 records,— 1903, May 15, 1; May 16, 2; May 18, 2; May 19, 2; Sept. 1, 1; 1904, Apr. 25, 1; Apr. 26, 1; May 5, 1; May 16, 1; May 17, 1; May 18, 1; total, 14.
 Water Thrush, 1 record,— May 19, 1903, 1.
 Northern Yellow-throat, 7 records,— 1903, May 14, 1; May 22, 1; Oct. 12, 1; 1904, May 11, 1; May 20, 2; May 21, 1; May 24, 2; total, 9.
 Canadian Warbler, 1 record,— May 21, 1903, 1.
 American Redstart, 5 records,— 1903, May 19, 1; Sept. 1, 2; Sept. 3, 1; Sept. 4, 1; 1904, May 20, 1; total, 6.
 Catbird, 10 records,— 1903, May 9, 1; May 15, 1; May 18, 1; May 20, 1; Sept. 29, 1; 1904, May 5, 1; May 7, 2; May 12, 1; May 13, 1; May 20, 1; total, 11.
 Brown Thrasher, 14 records,— 1903, May 4, 1; May 15, 1; May 16, 1; May 18, 1; May 20, 3; May 22, 2; May 23, 1; May 26, 1; May 27, 2; Sept. 30, 1; Oct. 3, 1; 1904, May 5, 2; May 16, 1; May 24, 1; total, 19.
 Winter Wren, 1 record,— Oct. 28, 1904, 1.
 Brown Creeper, 1 record,— Oct. 12, 1903, 1.
 Red-breasted Nuthatch, 3 records,— 1903, Sept. 1, 1; Sept. 8, 1; Sept. 24, 1; total, 3.
 Chickadee, 14 records,— 1903, Sept. 15, 3; Sept. 21, 3; Sept. 25, 7; Sept. 29, 2; Sept. 30, 2; Oct. 1, 4; Oct. 6, 2; Oct. 7, 2; Oct. 10, 1; Oct. 12, 2; Oct. 16, 3; Oct. 19, 1; Oct. 30, 1; total, 33.
 Golden-crowned Kinglet, 3 records,— 1903, Oct. 21, 1; Oct. 29, 1; Oct. 31, 1; total, 3.
 Ruby-crowned Kinglet, 5 records,— 1903, Oct. 13, 2; Oct. 14, 3; Oct. 21, 2; Oct. 23, 1; Oct. 24, 1; total, 9.
 Wood Thrush, 2 records,— 1903, Oct. 14, 1; 1904, May 17, 1; total, 2.
 Wilson's Thrush, 5 records,— 1903, May 19, 1; 1904, May 12, 2; May 17, 1; May 20, 1; May 24, 2; total, 7.
 Olive-backed Thrush, 13 records,— 1903, May 22, 2; May 27, 1; Sept. 8, 2; Sept. 9, 1; Sept. 29, 2; Sept. 30, 1; Oct. 1, 1; Oct. 14, 1; 1904, May 11, 1; May 12, 1; May 13, 1; May 18, 1; May 20, 1; total, 16.
 Hermit Thrush, 32 records,— 1903, April 29, 6; May 4, 1; Sept. 30, 2; Oct. 6, 1; Oct. 12, 2; Oct. 13, 2; Oct. 14, 8; Oct. 15, 4; Oct. 16, 1; Oct. 21, 1; Oct. 23, 3; Oct. 24, 2; Oct. 26, 2; Oct. 27, 4; Oct. 28, 2; Oct. 29, 2; Oct. 30, 2; Oct. 31, 4; Nov. 2, 1; Nov. 4, 3; Nov. 5, 1; Nov. 9, 1;

Nov. 10, 1; Nov. 11, 1; Nov. 16, 1; Nov. 23, 2; Nov. 24, 2; 1904, April 25, 8; April 26, 2; April 30, 2; total, 79.

American Robin, 2 records,—1903, Oct. 21, 1; Oct. 22, 1; total, 2.

Bluebird, 1 record,—Nov. 6, 1903, 2.

In the record above given, where a species occurred on consecutive dates, doubtless in some cases the same individual remained two or more days. In one instance, at least, this was certainly the case. A Hermit Thrush, one of four noted October 15, 1903, had a bar of light yellowish on the left wing. This bird was again noted on the 16th, the only one seen on the latter date. In the majority of cases, however, such records probably represent different individuals, and as far as I am able to judge, the birds make but a brief stop in the churchyard. In some cases the birds noted in the morning were gone by noon, and others not noted in the morning had appeared.

Truly Saint Paul's Churchyard seems to be for many migrant birds an oasis in a desert of brick and mortar, a spot where tired and hungry individuals may drop down to rest and feed, and incidentally to gladden the eye and quicken the pulse of the city-confined nature lover.

A Robin (young of the year) noted August 30, will perhaps necessitate the modification of the statement regarding absence of birds during summer, though it is quite possible that this individual had begun a migratory movement.

With the exception of the Robin above referred to, the first migrant (a Water-Thrush) was not noted until Sept. 13, and the indications of the churchyard evidence were that the fall migration was either begun late, or that the earlier migration was hurriedly performed, with few stops.

THE CUBAN CRAB HAWK, *URUBITINGA GUNDLACHII* (CABANIS).

BY OUTRAM BANGS.

THE Crab Hawk or Black Hawk of Cuba was described by Cabanis in 1854 and named *Hypomorphnus gundlachii*.¹ Since then authors have sometimes given it by that name, but have more often referred it to the continental *Urubitinga anthracina* (Licht.), it appearing thus in 'Catalogue of Birds in British Museum,' Vol. I, and in Sharpe's 'Hand-List of Birds.'

Gundlach was of course familiar with the bird, but probably never had an opportunity of comparing it with *U. anthracina*, and in his 'Ornitología Cubana' (Habana, 1893) gives the following account of the Cuban species, pages 18 and 19.

"Genus *Urubitinga* (Lesson).

"6. *Urubitinga anthracina* (Falco anthracina Licht). Batista and in the Isle of Pines it is called *Copete*.

"This species has on p. 40 of my Contributions the name of *Hypomorphnus Gundlachi*, Cabanis, but as this name is later than that of Lichtenstein I place it in the synonymy. It is also found in the Isle of Pines, in Jamaica, in Guadaloupe, and in Grenada, and probably in other of the Lesser Antilles, besides Central America and Mexico.

Apparently it is found only in mangrove swamps and on the banks of large rivers. Its note resembles its common name *batista*. I have killed a few, both adults and young.

"Dimensions are adult male, length 488-520, extent 1226-1232. Of the female, length 566-610, extent 1367-1418 mm.

"I found in the stomach remains of crustaceans. Other naturalists have found in the stomachs frogs, snakes, and fishes, but no one has found remains of birds. It is then a species which is neither useful nor harmful.

¹J. f. O., 1854, extra page, lxx.

"In the Isle of Pines I found a nest in a Júcaro (*Avicennia*), constructed of twigs like nests of other hawks. The egg was dirty white with a greenish tinge. At the larger end there were some very pale lilac spots. The dimensions were 58×45 mm.

"Its flight is rapid, rather in a straight line and not in circles."¹

Specimens of *U. gundlachii* are singularly rare in collections, so much so, that it is very doubtful if any American ornithologist has ever seen one. Cory speaks of the bird as though he had never seen a skin, and I know Ridgway never saw it. I was therefore delighted when my friend, John E. Thayer, Esq., presented me with a fine adult male, shot at its nest, together with the female, in Cayo Romano, Puerto Principe, Cuba, April 15, 1905, by Harry A. Cash.

I at once saw Mr. Cash and got him to tell me all he knew of the species, with which he had become very familiar during a short collecting trip, made in an open boat among the Cays of the north coast of Puerto Principe, in April and March last. Mr. Cash says that the 'Batista' is a common bird in this region, but that it appears to be entirely confined to the vicinity of the coast — the mangrove swamps and shores of the salt lagoons and rivers — and that he did not see it far inland.

At that time of year the birds were in pairs, and each pair seemed to hold undisputed possession of three or four miles of coast in the neighborhood of its nest. About ten pairs in all were seen.

My bird, a male, was killed at its nest April 15, and next day the female was shot and one fresh egg taken from the nest. The female contained another egg, soft-shelled and without markings, but nearly full size.

The nest was about twenty feet from the ground in a small 'hobo' tree, standing at the edge of a salt lagoon two miles from the sea. It was in appearance much like an Osprey's, evidently used year after year, the lower twigs showing signs of age and

¹This translation was kindly made for me by Capt. Wirt Robinson, U. S. A.

I have omitted Gundlach's description because it is long and detailed and when translated into English not particularly clear.

decay. The twigs used in the construction of the nest were very large, and there was no lining of soft material or feathers, and no feathers were found on the bushes in the vicinity of the nest.

The egg which Mr. Cash has kindly given me is rounded ovate in shape. The ground color is dirty bluish white, and it is irregularly covered with small blotches and dots of pale, dilute chestnut, a few little dots here and there being strong chestnut; these markings rather more numerous at the larger end. It measures, 56 by 45.5 mm.

Mr. Cash shot, in all, three adult birds but unfortunately two of them spoiled; he informs me they were all practically alike.

The Cuban Crab Hawk is a very distinct species, and of course should be known as *Urubitinga gundlachii* (Cabanis). It differs from all other members of the genus in the body color, in the fully adult plumage, being rich chocolate brown, *not black*, the tail and primaries only being blackish. It differs also in many details from *U. anthracina* with which it has been confused, but to which, I should say, it bears only a distant relationship. The more marked of these are, that the lining of the wing is much purer and more extensively white; the two lower white bands on the tail (usually indicated by a few white spots in *U. anthracina*) are broader and more pronounced and the dusky band separating the broad central white band from the next lower one is very narrow. It is of about the size of, or a trifle larger than, *U. anthracina*, with a decidedly heavier, broader bill.¹ My skin, no. 15242, adult ♂, measures: wing, 365; tail, 206; tarsus, 92; culmen, 38.5 mm.

The Cuban species differs much from the Crab Hawk of St. Vincent, lately described by Austin H. Clark as *Urubitinga anthracina cancrivora*,² not only in color and other characters, but in habits. The St. Vincent *Urubitinga* is a bird of the high mountain forest, while *U. gundlachii* appears to be wholly confined to the mangrove-fringed sea coasts and cays.

¹ Most of these characters were dwelt upon at length by Cabanis in his original description of the species.

² Preliminary Descriptions of Three New Birds from St. Vincent, West Indies. Proc. Biol. Soc. of Washington, Vol. XVIII, p. 63, Feb. 21, 1905.

GENERAL NOTES.

The Dovekie on the Coast of North Carolina.—I wish to record the capture of a male Dovekie (*Alle alle*) January 20, 1905, on the beach of the Currituck Shooting Club, N. C., half a mile south of the Life Saving Station. The bird was picked up alive. It only lived a day. It was sent to me in the flesh by a member of the Club and is now in my collection. —JOHN E. THAYER, *Lancaster, Mass.*

The Golden Eagle (*Aquila chrysaetos*) near Ottawa.—A bird of the year of this species was given to me, which had been caught in a trap set for otter or muskrats near High Falls, Wright Co., Quebec, forty miles northeast of Ottawa. It measured 77 inches from tip to tip. This species has not been reported from this vicinity for years. The Bald Eagle is a little more frequent. —C. W. G. EIFRIG, *Ottawa, Ont.*

The Genus *Conurus* in the West Indies.—The distribution of the genus *Conurus* in the West Indies is worthy of notice. In the Greater Antilles it is found on Jamaica, Cuba, Haiti, Porto Rico, and St. Thomas. It was formerly found (*C. euops*) on the Isle of Pines, but there are no records of its occurrence on islands other than those mentioned, although *Amazona* is found on Grand Cayman and in the Bahamas. All the species to which we have reference in literature have survived to the present day. One extra-limital species of parakeet, *Brotogerys tui*, has been credited to these islands, the mistake apparently having been first made in the Planches Enluminées (No. 456, fig. 1, "La Petite Perruche de l'Isle St. Thomas" = *B. tui*). In the Lesser Antilles parakeets are now everywhere extinct, but we have good evidence that they formerly existed on Guadeloupe, Dominica, Martinique, and Barbados. Here, as in the Greater Antilles, their distribution was apparently erratic; Barbados, with no other genus of Psittacidae, corresponds to St. Thomas, while St. Lucia and St. Vincent, each with an *Amazona*, resemble Grand Cayman and the Bahamas. It is difficult to understand why some of the other islands, such as St. Kitts, Nevis, Antigua, St. Vincent, and Grenada, but more especially Tobago and Trinidad, have never, so far as known, had as a resident any species of *Conurus*.

The parakeet, unfortunately, appears to have been too small to attract the attention of the earlier writers, and we therefore find the references brief and unsatisfactory. Dutertre (Hist. gén. des Isles des Christophes, de la Guadeloupe, etc., p. 299, 1654; Hist. gén. des Antilles habitées par les François, II, p. 251, 1667), de Rochefort (Hist. nat. et morale des Isles Antilles, p. 157, 1658; p. 175, 1665), and Labat (Nouv. voyage aux Isles de l'Amérique, II, p. 218, 1742) all mention them and give good accounts of their habits and characteristics, but in no case give enough description to enable us to identify the species to which the birds belonged. The

parrakeet of Guadeloupe is said to have been the smallest of the Antillean species, and to have been green throughout except for some small red feathers in the head, with a white beak, and about the size of a thrush (Labat).

Brisson (Orn., IV, p. 330, 1760) under "La Perruche de la Guadeloupe" says: "Size of a half grown chicken, green throughout; naked skin about eye, white; iris red; cere white; beak, feet, and claws, white. Found in Brazil and Guadeloupe." This description was probably founded on that of Labat, and is unfortunately applicable to more than one species, although, perhaps, it may best be referred to *Conurus enops*. It cannot have been taken from a Cuban bird, however, as Labat was for many years a resident in these islands, and was well aware that the avifauna of any one differs markedly from that of any of the others.

Under the name of "La Perruche de la Martinique," Brisson (*l. c.*, p. 336) gives a description of a bird which covers perfectly the well-known *Conurus æruginosus* of the mainland, referring to Edwards (Birds IV, pl. 177, p. 177, 1751) for a figure of the species. It is on this plate and description that Linnæus's [*Psittacus*] *æruginosus* (Syst. Nat., I, p. 142, No. 17, 1766) is founded. Brisson says that this bird is found in Martinique, and also in various places on the mainland, while Edwards gives for it the rather vague habitat of "West Indies." Very likely this is a case of a continental species wrongly credited to the Antilles (comparable to that of *Brotogerys tui*); but we have no evidence to show that this is the case, and it is not at all improbable that the *Conurus* of Martinique was a brown-throated species, similar to *C. æruginosus*.

There appears to be no description extant of the species which formerly inhabited Dominica; but it seems to have been exterminated at an early date. Ober's remarks (quoted by Lawrence, Proc. U. S. Nat. Mus., I, p. 64, 1878) doubtless had reference to *Amazona bouqueti*, and not to any species of *Conurus*.

Hughes, in his 'Natural History of Barbados' (1750) under "The Parakite" (p. 73) says: "This is of the frugivorous kind, and about the bigness of a thrush, having a longer and more crooked bill. It feeds on all manner of berries, popaws, and ripe plantains, residing chiefly in inaccessible gullies. The bird borrows its name from its resemblance in make, but not in plumage, to the small green parakite." Sir Robert Schomburgk (Hist. Barbados, p. 681, 1848) includes "*Psittacus passerinus*" in his list of the birds of the island, but no parrakeet is mentioned by Ligon.

In summing up the above it will be seen that, while there appears to be ample evidence for admitting the genus *Conurus* into the avifauna of the Lesser Antilles as formerly resident on Guadeloupe, Dominica, Martinique, and Barbados, all that we can say respecting the species is that the one on Guadeloupe was the smallest (of those on the French islands), and resembled *C. enops* of Cuba. Whether the Lesser Antillean birds were colonies of continental species (comparable to the case of *Ceryle torquata* [sticti-

pennis], *Antrostomus rufus*, or *Urubitinga anthracina* [*cancrivora*]), whether they were seasonal visitants (as *C. æruginosus* appears to be on Margarita Island, and *Muscivora tyrannus* is on Trinidad, Tobago, Grenada, and the southern Grenadines), or whether they were distinct endemic species we cannot determine, nor can we judge from the other genera of Psittacidae, *Ara* and *Amazona*, inhabiting these islands; for *Conurus* is more restless in its habits, and more apt to cross wide stretches of water than the species belonging to these genera, and we have one West Indian species (*C. pertinax*) which has a peculiarly interrupted range (St. Thomas and Curaçao), a circumstance not known to occur in any species of *Ara* or *Amazona*.—AUSTIN H. CLARK, *Boston, Mass.*

Nesting of the Raven (*Corvus corax principalis*) at Cumberland, Md.—In my list of birds of western Maryland (Auk, XXI, 1904, p. 234) I mentioned, besides a large permanent colony six miles from the city, a very noisy pair that I had seen on Will's Mountain, right at the city limits. When on a visit to this my former home last summer, I was informed by my former assistants that a pair of Ravens had nested that spring in the 'Narrows.' This is a highly romantic and picturesque cañon in Will's Mountain which otherwise runs on unbroken for many miles, and forms the only outlet from Cumberland to the north, so that several railroads and street car lines pass through at the bottom. I found the boy, a very intelligent lad of fifteen, who had discovered and investigated the nest and taken the young ones along. He stated this to me, corroborated by others: The nest was in a well nigh inaccessible place on the side of the cliff overlooking the Baltimore and Ohio Railroad. It was built of large sticks, some horsehair, rags, and in the middle much of the shredded rag put by railroaders in the axle-boxes of railway cars. He went to the nest March 28 for the first time and found three nearly full grown young; he thinks they must have been a month old. He took two along, with the intention of raising them. The old ones were very vicious, flew close to him, as though wanting to strike at him, and made a great uproar. April 4 he got the remaining one, which also showed fight, even for a while in captivity. The first two died after several weeks, being exhibited in show windows, etc., but the third one was still alive August 2, when I saw it. It seemed to be then somewhat attached to its master and upon his word would come out of the woodshed, if no strangers were about. The old ravens remained at the Narrows; I saw and heard them July 20, but they made no further attempts that year at raising a brood. They evidently must have lost a good deal of their fear of man, for the upper edge of these cliffs is almost daily visited by sightseers.—C. W. G. EIFRIG, *Ottawa, Ont.*

A One-legged Crow (*Corvus brachyrhynchos*).—On May 6 of last year, while out in the woods with a friend, he shot a crow out of a tall, slender

spruce tree. When we picked it up, we were astonished to find one foot entirely missing, and it certainly was not a mutilation that had lately occurred, for the end of the stump of the tarsus was completely healed and well worn, as though it had always been in this condition. About an inch of the tarsus was there. It was a male bird, in good plumage and condition; the stomach was filled with food, mostly earth worms. We were afterwards told by a person living near by, that he had observed a crow the previous summer that had a very queer way of hopping about on the fields while feeding. — C. W. G. EIFRIG, *Ottawa, Ont.*

An Unusual Abundance of the Canada Jay (*Perisoreus canadensis*) in and near *Ottawa, Ont.* — Whereas the winter from 1903 to 1904 was notable for the abundance of the Pine Grosbeak (*Pinicola enucleator*) in the streets of Ottawa, their early arrival and long staying, this last winter was notable for the abundance of the Canada Jay. Mr. E. White, a very reliable ornithologist, tells me he has never before seen them in or very near the city, but this year they were about all winter. I saw the first ones September 28 in the next county, but by October 7 they were near Ottawa; on October 13 I saw three on the driveway in the heart of the city. Some were taken and brought or reported to me on October 15, 20, 22, 28, November 8 and 12. November 19 to 23, while on a trip of forty miles north into Quebec, I saw them frequently, especially where farmers had butchered or skinned hares, at the kitchen refuse, etc. One was taken February 2 at the city limits, and I saw one March 1 in the neighborhood. The reason for their unusual abundance is not clear. Their usual food supply, which I think is not great in any winter, was surely there last winter, the lumber camps, about which they congregate, not having diminished in number. — C. W. G. EIFRIG, *Ottawa, Ont.*

Hoary Redpoll in Montana. — I am able to record another occurrence of the Hoary Redpoll (*Acanthis hornemannii exilipes*) in Montana. On March 9, a Hoary Redpoll alighted with two common Redpolls (*Acanthis linaria*), on some rails close to where my wife and I were standing. I had my binoculars with me but they were not required, as the bird was only eight paces distant and could be easily examined. While exactly the same size as its two companions it was much handsomer; the crimson crown contrasted with the light-colored back, which, but for some black streaks, would have looked white. There were no signs of pink on the breast, and I took it to be an unusually pale female of this species. As I never before met with a specimen among the many hundreds of Redpolls observed since 1889, I regard the Hoary Redpoll as a very rare bird here. — E. S. CAMERON, *Terry, Mont.*

A curious Anomaly in the White-throated Sparrow (*Zonotrichia albicollis*). — On Sept. 28, 1904, I took at Germanicus, Renfrew Co.,

Ontario, a male bird of this species, that showed a strange freak in the tail. While all the other feathers are of normal length and development (2.50 in. long), one shows a length of 3.75 in. It is of the same color as the other tail feathers, but the vanes are narrower. Near the ends of the other rectrices it is much attenuated, as though it had wanted to stop growing at that point. It is the only instance of this kind that has come under my observation.—C. W. G. EIFRIG, *Ottawa, Ont.*

The Migrant Shrike (*Lanius ludovicianus migrans*) at Ottawa, Ont.—This shrike is a common breeder here. In 1904 I saw the first ones, a pair, on April 5, and this year on March 30. They frequent wet meadows, old fields, etc. By the middle of April they are common. The last one in 1904 I saw August 23, when I was attracted to a hedge by the low but pretty singing of a bird, which proved to be the shrike. The song was much like the subdued song of the Catbird, with much of its sweetness. Although those that I took had beetles only in their stomachs, yet on April 26, 1904, I saw a pair that had a Song Sparrow impaled on a thorn and had eaten off the head. May 10 I found the first nest in the usual thorn-thicket in a moist meadow, containing two eggs. May 21, I found another nest at Casselman, thirty miles east of Ottawa; this was eight feet up in a little wild plum tree and contained five young about a day old and one infertile egg. The female, in both cases, would only fly away when the person was within a few feet of the nest, and would sit near by and utter queer rasping or gurgling notes of protest.—C. W. G. EIFRIG, *Ottawa, Ont.*

Capture of the Kirtland Warbler near Richmond, Ind.—On May 13, 1905, a female Kirtland Warbler (*Dendroica kirtlandi*) was shot about six miles east of here by Mr. Loren C. Petry. It was silent, perfectly fearless, and showed the 'teetering' habit after the manner of a Palm Warbler or Titlark. It was in a clump of low bushes.—D. W. DENNIS, *Richmond, Ind.*

The Kentucky Warbler at Winneconne, Wisconsin.—On May 7, 1905, I had the pleasure of finding a Kentucky Warbler (*Oporornis formosa*) in a damp corner of the woods near Lake Winneconne. I observed it for ten or fifteen minutes from a distance of only a few feet, and am thus positive of the identification.

The Kumlien-Hollister List of Wisconsin Birds (1903) says of this species: "Dr. Hoy took one specimen at Racine (May 10, 1851) and we have but six other records for the State for 60 years, all about Lake Koshkonong, in spring."—HENRY P. SEVERSON, *Winneconne, Wisc.*

Wintering of the Brown Thrasher in a Park in New York City.—A Brown Thrasher (*Toxostoma rufum*) passed the winter of 1904-05 in Morningside Park, New York City. I first saw him on Oct. 24, 1904,

and subsequently on twenty-three different occasions. He would apparently disappear from the park for short intervals, once for a period of two weeks, as I was on the watch for him and visited the park almost daily without seeing him. On December 19 he came to me for the first time for peanuts, and after that always came to my hand freely and without fear. On May 10, 1905, I saw a female of the same species with him, and also several other Brown Thrashers. As this was the last time I saw him, he probably accompanied the other Brown Thrashers when they left the park.—LILLIAN W. LEWIS, *New York City*.

An addition to the Avifauna of Cuba.—On October 16, 1903, at the Morro Castle, Santiago, Cuba, I took a specimen of *Saxicola oenanthe leucorhoa* (Gmel.). It was a female in good condition. It was feeding in the scanty grass in company with a large straggling flock of Palm Warblers.—WIRT ROBINSON, *Capt. U. S. A., Ft. Totten, N. Y.*

Note on *Lagopus leucurus* and *Leucosticte australis*.—In Volume V, Zoölogy of the Wheeler Survey, published in 1875, mention is made of two specimens of *Leucosticte australis* collected by C. E. Aiken on Mount Blanco, New Mexico, Sept. 3, 1874, with the remark that "this is perhaps near the limit of its southward range."

On page 439 of the same volume are recorded six specimens of *Lagopus leucurus* collected by Aiken on Mount Blaine, Colorado, Sept. 3, 1874. As the two localities are several hundred miles apart, and as the specimens of the two species are recorded as having been collected on the same day by the same collector (who, moreover, never visited Mount Blanco), it is evident that the records involve a mistake. Inquiry discloses the fact that they involve two mistakes.

A letter recently at hand from Mr. Aiken states that the specimens of both *Leucosticte* and *Lagopus* were secured by him on the mountain in southern Colorado known upon present maps as "Summit Peak." At the time of his visit, however, no name for the peak was known to Mr. Aiken, but he was informed that it was to receive the name of Mount Blaine. Hence the name of the latter in the record of the ptarmigan and on the labels of the specimens. The name Mount Blaine was not bestowed by the Wheeler Survey upon the "Summit Peak," but subsequently was given to a high mountain in Ouray County which appears on the Hayden and other maps as Mount Sneffels. How the specimens of *L. australis* came to be wrongly labeled Mount Blanco, New Mexico, and so recorded in the volume above mentioned, will probably never be known; nor does it much matter.

It is important that Summit Peak be recorded as the true locality of Aiken's specimens of *Leucosticte australis* and *Lagopus leucurus*, since the latter have been taken as the types of *Lagopus leucurus altipetens* (Auk, XVIII, p. 180, 1901) and credited to Mount Blaine; while there is

no record to show that *Leucosticte australis* has ever been taken in New Mexico, Summit Peak, southern Colorado being at present its southern recorded limit. — H. W. HENSHAW, *Washington, D. C.*

Notes from Northern New Mexico. — The present status of *Lagopus l. altipetens* in the southern Rocky Mountains has been one of the interesting questions of our Biological Survey bird work in New Mexico. In the summer of 1903 we obtained old records of a few Ptarmigan seen in Mora Pass and on the peaks above the Upper Pecos, and in the winter of 1904 a specimen was collected in the Taos Mountains above Twining, about thirty miles south of the Colorado line, this being the first skin to substantiate the New Mexico records.¹ On July 19, 1904, we entered the mountains at Twining and proceeded to work the highest parts of the range between Taos and the Colorado line. The crest of the range between Taos and Twining runs far above timberline, by our aneroid readings averaging about 13,000 feet, with Taos as a base station at 7,000 feet. The highest point, known locally as Wheeler Peak, averaged with five readings 13,700 feet, which would make it the highest peak in New Mexico. In this group of mountains, although most of the snow melts in summer, Ptarmigan evidently were common before the advent of miners and sheep men. Our Indian camp man told us that twenty years before he had seen 'whole-lot-ta,' and now the birds are still common enough to be familiarly known by the Indians who see a few every year. At the time of our visit, however, large bands of sheep were running over the crest of the range, and although our party made six different trips to the peaks, only four Ptarmigan were seen. Two of these were secured by Sun-Elk, our Indian, who found them among the peaks above 13,000 feet, where he had seen them in previous years. Three primaries that he discovered on the trail followed by the sheep men suggested the probability that the sheep scared up the birds and the herders killed them with stones. Large bands of sheep were running over the crest of Costilla Peak just south of the Colorado line when we reached there on August 20. On the peak at 13,200 and 13,300 feet by the barometer, Mr. Bailey found evidence of Ptarmigan in piles of winter sign, considerable accumulations being found in some places. Two Mexicans he met on the mountain reported killing four of the birds that day, and a hunter from the neighborhood spoke of them familiarly. He generally found them in small flocks, he said, but sometimes saw as many as fifty together. He called them snowbirds, saying that they were usually found sitting around on the little benches near a large snowbank on the northeast side of the peak at about 13,200 feet. He added that the birds were very tame and that the males called in the mornings like a hawk. While only three

¹ Additional Notes on the Birds of the Upper Pecos. *The Auk*, 1904, pp. 351, 352.

specimens of *altipetens* have actually been collected from the New Mexico Rockies, such evidence gathered from hunters, Indians, and cattle men, shows conclusively not only that the birds were once common in the northern mountains of the territory, but that, although their numbers have been greatly depleted, Ptarmigan are still to be found by careful search on the highest peaks of New Mexico.

Ptarmigan and *Leucosticte australis* were the two birds we were most anxious to find in the high Rockies, and on July 20, the first day that we climbed Wheeler Peak we were following up the crest of the ridge at about 13,500 feet by the barometer, when a bird flew overhead whose call, undulating flight, and emarginate tail proclaimed it a *Leucosticte*, but hunt as we would we could get no other sight of it or its companions. A week later, however, on July 28, while Mr. Bailey was crossing an adjoining peak, he again heard the chirping of *Leucosticte*, this time in a cloud below him. When he answered the call a flock of about half a dozen came flying out of the cloud and lit on the stones four or five rods from him. An adult male that lit in sight was secured but the rest scattered among the stones and at the shot disappeared again in the clouds. Two days later Sun-Elk got another adult male near the same place, possibly from the same flock. These birds were both in full adult plumage with the characteristic black bills of the breeding season. The question that arose was, were they birds that had bred on these mountains, or were they from a band that had wandered down from Colorado after the breeding season? The mountains were about thirty miles from the Colorado line and judging from Mr. Cooke's accounts of the habits of the birds they do not wander much from their breeding grounds. He states, moreover, that the height of the breeding season is the latter part of July, and our first bird was seen July 20, the flocks being seen on July 28 and July 30. In August, as Mr. Cooke says, "Young and old swarm over the summits of the peaks, picking insects off the snow. By the last of October or early in November they descend to timberline and remain there through the winter except as they are driven a little lower by the severest storms. At the same time a few come into the lower valleys almost to the base of the foothills."¹ Nothing seems to be known of any southward wanderings. It would seem probable, therefore, that the Wheeler Peak birds furnish a breeding record for New Mexico. But however that may be, the only other records of *Leucosticte australis* from New Mexico are those of two birds taken by Mr. C. E. H. Aiken, reported in the Wheeler Survey, and, as Mr. Henshaw explains above (see p. 315), it now proves that these birds came, not from New Mexico, but from Colorado. The Wheeler Peak specimens therefore afford the first authentic record for New Mexico.

Another addition to the New Mexico list, presumably also a breeding record, is that of *Hylocichla f. salicicola*, for we heard one of these

¹ The Birds of Colorado, State Agr. Coll. Bull. No. 37, p. 98.

thrushes singing on July 17, 1904, in the willows bordering Pueblo Creek, just beyond the Pueblo of Taos. As the birds are 'not uncommon' in Colorado, it would not be strange to find them in suitable localities thirty miles south of the borderline.

Skins of male and female *Galeoscoptes carolinensis* had previously been sent in from Rinconada under date of June 4, 1904, and we found Catbirds fairly common in the thickets bordering Pueblo Creek the second week in July. One was seen carrying food on July 15. On July 14, as we drove along the road our attention was attracted by the cries of a pair of Catbirds in the adjoining thicket, and when Mr. Bailey forced his way through the tangle he found the nest empty except for one headless nestling whose murder the old birds were bewailing.

Dendroica caerulescens, while migrating only 'casually to the east base of the Rocky Mountains,' had previously been recorded from the Rio Mimbres and Rio Grande in New Mexico, and on October 8, 1904, Mr. Bailey took one in the Gallinas Mountains, near the middle of Rio Arriba County. The bird, which was shot from a high conifer in a gulch, proved to be a male in first fall plumage.—FLORENCE MERRIAM BAILEY, *Washington, D. C.*

The former Status of the Flamingo and the Fish Hawk in the Lesser Antilles.—In the writings of Dutertre (*Histoire générale des Isles des Christophe, de la Guadeloupe, de la Martinique, et autres dans l'Amérique, 1654, p. 300; Hist. gén. des Antilles habitées par les François. II, 1667, p. 268*) we find the Flamingo (flambant; flaman; flamand) mentioned as occurring at that time in Guadeloupe. He says, regarding this bird: "Rare, and only seen in the 'salines' farthest away from habitations. The young are more white than the adults, but become redder with age." Although no definite locality is given, Guadeloupe is probably meant (the other islands considered being St. Kitts, Dominica, Martinique, and Grenada), as the author resided there, and in all cases where an animal or bird described does not occur on that island (as for instance the armadillo, 1667, p. 298, of Grenada) he gives its habitat. Moreover, the zoölogical notes are largely confined to the fauna of Guadeloupe. This is also, I believe, the first mention of the lighter (less red) plumage of the young bird.

Mr. Francis Coull (at present residing at Grenada) tells me that formerly Flamingos were of casual occurrence at Antigua, and he once saw several in the Five Island swamps, about forty years ago. He has not heard of them on the island since that time, although they were then well known to many of the natives under the name "Flamingo." There is no mistaking Mr. Coull's identification, and the locality is very favorable for the birds.

At Anegada, the most northerly of the Virgin Islands, where the conditions are much like those in the Bahamas, I am informed by a resident that they are still of casual occurrence. Dr. Christian Branch of St.

Kitts formerly magistrate at Inagua, Bahamas, who knows Anegada well, assures me that this is true.

The Lesser Antillean range of *Phænicopterus ruber*, then, should be, formerly south to Guadeloupe; until about 1860 casual on Antigua, now casual at Anegada, and apparently unknown south of that island.

The Fish Hawk (*Pandion haliaëtus carolinensis*) is not now known to breed in the Lesser Antilles, although of common occurrence throughout the islands in fall and winter and sometimes seen in summer. The following account by Dutertre regarding this bird in Guadeloupe is therefore of interest (1667, II, p. 253). "The children of the natives (Caribs) train the young (fish-hawks) and make use of them for fishing, but only for sport, as they never bring back the fish."—AUSTIN H. CLARK, *Boston, Mass.*

Two Massachusetts Records.—Mr. John E. Thayer permits me to record the following captures, the specimens referred to being now in his museum at Lancaster, Mass. On May 24, 1904, a boy caught a female Purple Gallinule (*Jonornis martinica*) at Randolph. The bird was kept alive for a few days, but finally died, and was purchased by Mr. Thayer. On August 12, 1904, Mr. Henry W. Abbott shot a female Little Blue Heron (*Florida cærulea*) at Sandwich. The specimen is almost white, being in the light phase of plumage.—REGINALD HEBER HOWE, JR., *Concord, Mass.*

Notes on Nebraska Birds.—Since the publication of the 'Birds of Nebraska' last summer some new records have been established which may prove to be of more than local interest, and these are given below.

Anas obscura rubripes. RED-LEGGED BLACK DUCK.—Until recently we had no definite record of this duck in the State. A typical male specimen of this subspecies was received at the University which had been shot on the Platte River near Greenwood on March 15, 1905. A subsequent examination of all other specimens accessible showed another male taken at Lincoln November 16, 1896, by Mr. August Eiche, to be referable to this form, although not quite typical of it. A female taken at Calhoun and now in the collection of J. E. Wallace at Omaha was distinctly *rubripes*, and was in a flock from which at the same time two males of undoubted *obscura* were taken. Additional records of *obscura* were determined in a female from Fairmont and a male from Gresham.

Herodias egretta. AMERICAN EGRET.—The sixth record of this fine bird for the State is based on a specimen shot at Nehawka, May 2, 1905, and sent to the University for determination and mounting. It has been retained in the University collection. The record of the "Snowy Heron" from Fairbury, as recorded in our list, really refers to this species, and forms the fifth definite record of its occurrence.

Phalaropus lobatus. NORTHERN PHALAROPE.—Our previous conception of the Northern Phalarope as a "rare" migrant has not been at all

borne out this year. On August 23 and September 18, 1904, and on May 14, 1905, this bird was present in large flocks at the lake west of Lincoln. The same observation applies to the Red-backed Sandpiper and the Buff-breasted Sandpiper, the former having been noted very commonly on May 22, August 23, September 4 and 11, 1904, and on May 14, 1905, while the latter was present in great numbers on September 11 and 18, 1904, being the most evident sandpiper on the lake.

Falco sparverius phalaena. WESTERN SPARROW HAWK.—I have recently examined two male Sparrow Hawks, one taken at Florence and one at Lincoln, in the collections of Messrs. Wallace and Eiche respectively, and both are as clearly *phalaena* as is our specimen from Sioux county. Very like'y it is not rare as a migrant over the entire State.

Tyrannus verticalis. ARKANSAS KINGBIRD.—This flycatcher, while abundant enough in the western part of the State, has, until the last two years, always been considered a rarity in eastern Nebraska where it occurs as a migrant. In fact, single records of its occurrence at Omaha, Lincoln, and West Point practically constituted the list of eastern records until last year when four additional records were established. During the past month of May, 1905, it has been reported frequently, and in some localities as common, one Omaha observer having seen twelve in one day. Personally I have seen it at Dunbar on May 6, at Lincoln on May 14, and at South Bend on May 17. There would seem to be considerable foundation for a belief that the species is extending its line of migration eastward.

Ammodramus henslowii occidentalis. WESTERN HENSLOW'S SPARROW.—A third record for this bird is one taken at Dunbar, April 30, 1904, by Mr. E. H. Jones of that place.

Vireo philadelphicus. PHILADELPHIA VIREO.—A pair of this vireo was observed under the binoculars for nearly an hour by the writer and others at Dunbar on May 16, 1905.—MYRON H. SWENK, *Dept. Entomology and Ornithology, University of Nebraska, Lincoln, Neb.*

Do Migrants Fast?—There has been an impression among some who have examined the stomachs of birds or who have speculated upon the various problems in connection with migration that many migrants make an effort to rid themselves of all food contents before beginning the flight. From the evidence of the examined stomachs alone, this opinion is the natural one, since they have been found in nearly every case to be perfectly empty, only rarely containing an amount of food equal to one per cent of the stomach capacity. Of more than one hundred stomachs of migrants examined by the writer, not more than five had a trace of food in them.

Recently opportunity was afforded to examine the entire viscera of many birds (mostly warblers) killed by striking the Washington Monument on the night of May 6-7, 1905. For the preservation of this material I am indebted to Prof. W. W. Cooke. With one exception the

stomachs were empty, but in a majority of the specimens, the *intestine*, including even the *duodenum*, was as well filled with food material as in a migrant warbler shot in the evening after feeding all day. This proves, at least for the species examined, that the birds do not make any special preparation for the migration flight in regard to the amount of food they carry. This is the rational supposition and is supported by the observed fact that birds are seen busily feeding on evenings which as shown by subsequent events are just prior to migration. The empty condition of the *stomachs* of birds killed in migration is easily explained by the rapidity with which the digestive process is usually accomplished in birds. — W. L. McATEE, *Washington, D. C.*

Hybridism between the Shoveller and Blue-winged Teal.—I have recently examined a very interesting hybrid, and the first I have heard of between these two species. Mr. James P. Catlin of Ottawa, Ill., in whose possession the duck is, writes me as follows: "It is an entirely new cross to me and was shot by the keeper of the Greenwing Gun Club on their preserve along the Illinois River at Bureau Junction, Ill., on April 3, 1905. He had a few decoys set out in a small opening in the flooded timber and this bird came in with a Blue-winged Teal hen. He killed the pair."

The specimen is a male about half way in size between the two species. The head shows the greenish reflections of the Shoveller, the spotted breast of the Teal, the chestnut abdomen, the speculum and under tail coverts of the Shoveller, and the upper wing-coverts of the Teal; the crescentic patch across the anterior portion of the head is normal for the Teal but not as pure white in color; the legs and feet have the bright yellow of the Teal. The bill is .65 in. longer than in a normal Teal, but is a miniature of that of the Shoveller in other ways.

Every specimen of hybrid duck which has come to my notice has been a male. The cross between the Mallard and Pintail is not uncommon; the last record was a specimen sent to me in the flesh by Mr. Charles M. Carter, shot at Bigelow, Mo., Feb. 25, 1905. Mr. Manly Hardy of Brewer, Me., has in his collection two examples of crosses between the Mallard and Dusky Duck, one favoring the plumage of the former, the other of the latter, one example each between the Gadwall and Widgeon, and the Blue-winged and Cinnamon Teal. — RUTHVEN DEANE, *Chicago, Ill.*

RECENT LITERATURE.

Townsend's 'The Birds of Essex County, Massachusetts.'¹ — This is by far the most elaborate treatise on the birds of so limited a district that has yet appeared in this country, it forming a neatly printed quarto volume of over three hundred and fifty pages. It is published as a memoir of the Nuttall Ornithological Club of Cambridge, and its thoroughness of research and literary execution does credit alike to the Club and the author. The introductory matter, comprising some seventy pages, is divided into nine chapters, following which is Chapter X, 'Annotated List of the Birds of Essex County' (pp. 74-321), a bibliography of ten pages, and an excellent index.

The introductory matter comprises nine chapters, as follows: (1) 'Topography and Faunal Areas' (pp. 6-11), which includes an account of the geographical boundaries, the topography, especially in its relation to glacial agencies, the principal botanical features, and the faunal affiliations of the district; (2) 'The Ocean and its Birds' (pp. 12-17), which treats informally of the manner and season of occurrence of the various species of water fowl that frequent the seacoast; (3) 'The Sand Beaches and their Birds' (pp. 18-29), in which various other beach inhabitants, as fishes mollusks, crustaceans, etc., come in for incidental mention, mainly as furnishing food for the birds. The characteristic birds of a sandy seabeach are, primarily of course, the Limicolæ, but Gulls and Terns, Ducks and Herons, are found among those that leave their 'footprints on the sands,' while many passerine birds also visit the beach for food. The interest of the seabeach to the ornithologist, at all seasons, in winter as well as in summer, is dwelt on at length, and the incidents of personal observation here set down afford proof not only of this claim, but of the author's familiarity with the varied forms of life of the beach under the ever varying conditions due to the passing of the seasons. (4) 'The Sand Dunes and their Birds' (pp. 30-44). The sand dunes of the Ipswich and other beaches of Essex County are well worthy of the special chapter devoted to them; the constantly changing forms of the dunes, due to the action of the winds, and their peculiar vegetation, as well as the birds that visit them,—in winter for food, in summer for nesting places,—conspire to give them special interest. It was here that the first specimens of the Ipswich Sparrow were taken—by C. J. Maynard in 1868. (5) 'The Salt Marshes and their Birds' (pp. 36-42), and (6) 'The Fresh Marshes and their Birds' (pp. 43-48), which furnish each their peculiar environment

¹ Memoirs of the Nuttall Ornithological Club. | No. III. | The Birds of Essex County, | Massachusetts. | By Charles Wendell Townsend, M. D. | — | With one plate and map. | — | Cambridge, Mass. | Published by the Club. | April, 1905. — 4to, pp. 352, frontispiece and map.

and assemblages of birds, are minutely described; several pages are also given to "some actual records of the various bird-voices" heard during the hours of night in the Fresh Marshes. (7) 'The Ponds and their Birds' (pp. 49-52) are similarly treated; a list of the water-fowl killed by gunners in Wenham Lake for the five years 1900-1904 forms part of the chapter. (8) 'Lighthouse Records' (pp. 53-59). Apparently few birds strike any of the nine lighthouses of Essex County. (9) 'Ornithological History of Essex County' (pp. 60-73). This is naturally one of the most interesting chapters of the book. The records of such early writers as Morrell (1623), Higginson (1630), Wood (1634) Morton (1637), and Josselyn (1675) are cited (although not here for the first time exploited) in evidence of the former much greater abundance of water-fowl and sundry other species. As is well known, the Great Auk was formerly a bird of the Massachusetts coast, though probably not within historic times; but the case is quite different with the Labrador Duck, the Wild Turkey, the Heath Hen, the Sandhill Crane, and the Wild Pigeon, all of which in earlier days were among the common birds of the region, while many others formerly common but now known merely as accidental stragglers have become practically extirpated. The history of the extirpation of several of these species is summarized. The author adds his own valuable observations on the changes in the bird life of Essex County during the last twenty-eight years; some species of water-fowl and shore birds have declined in numbers, while others appear to hold their own; hawks are growing scarcer, and the English Sparrow has greatly reduced the number of box-breeding birds.

The 'Annotated List,' forming of course the chief part of the volume, is admirably done. The points of chief interest are always explicitly stated, and the biographical observations are, in the case of a few species, extended to considerable length. Authorities are fully cited for the occurrence of the rarer species, and a number of species formerly attributed to the county are excluded on the ground that the evidence of their capture within the limits of the list is unsatisfactory. They are, however, together with species of probable occurrence, mentioned, in smaller type, in their proper places, with appropriate comment. The list of indigenous species and subspecies authenticated as birds of Essex County numbers 319; there are in addition 6 extirpated and 2 extinct species, making a total of 327, besides 2 introduced species. Sixteen are given as of doubtful record, 2 as of erroneous record, and one as mythical, making the total number of species considered, 254. The bibliography occupies pp. 322-331, and includes about 150 entries.

As already said, the work is marked by careful research, is well executed and in every way creditable to the author and the publishers, the Nuttall Club. The quotations from the seventeenth century historians of the region, which serve as mottoes for the chapters, are not only appropriate but impart a pleasing literary quaintness to this portion of the work.—J. A. A.

Job's 'Wild Wings.'¹—Mr. Job needs no introduction to ornithologists nor to the general public, either as a 'camera-hunter' or a field student of birds. To say, therefore, that the present work will add both to his prestige and to our knowledge of the larger wild birds of North America is no light commendation of his latest contribution to popular ornithology. 'Wild Wings' consists of four parts, each with a number of chapters according to the character of the subject matter. Part I is entitled 'Adventurings in Florida Waters,' and contains five chapters, as follows: (1) 'Cities of the Brown Pelicans' (Pelican Island, east coast of Florida); (2) 'Following Audubon among the Florida Keys' (contrasting present conditions with those witnessed by Audubon in 1832); (3) 'In the Cape Sable Wilderness'; (4) 'The Great Cuthbert Rookery' (the scene of the Cuthbert massacre of Egrets about 1890 revisited, with photographs from life of Wood and White Ibises, Cormorants, Anhingas, and Herons); (5) 'On Lonely Bird Key' (Bird Key, with Audubon reminiscences and present conditions). Part II, 'Other Wanderings South,' contains: (6) 'Scavengers of the South' (Turkey Buzzards and Black Vultures); (7) 'Virginia Bird Homes on Beach and Marsh' (the summer bird-life of Cobb's Island); (8) 'The Egret, in Nature and Fashion' (Egrets in life, with a résumé of the results and revolting barbarities of the millinery trade in aigrettes). Part III, 'The Sea, The Sea,' contains: (9) 'To Bird Rock in an open Boat' (Bird Rock in the Gulf of St. Lawrence and its sea-bird rookeries); (10) 'Amid Spruces and Sea-girt Islands' (southeastern Nova Scotia and adjacent islands); (11) 'Off Chatham Bars' (with the sea-birds off Cape Cod, Mass.). Part IV, 'The Elusive Shore-Birds,' contains: (12) 'The Shore Patrol' (Plovers and Sandpipers); (13) 'Northward with the Shore-Bird Host' (experiences on the Magdalen Islands and coast of Labrador); (14) 'Shore-Bird Loiterers' (chiefly about Turnstones, Wilson's Plovers and Willets). Part V, 'Raptors and Forest Fastnesses,' has: (15) 'The New Sport of "Hawking"' (with the camera—nests and eggs of various species of hawks); (17) 'Owl Secrets' (their nesting habits); (18) 'Adventures with Great Horned Owls.'

The above synopsis of the contents of 'Wild Wings' leaves little to add, except to say that the author's enthusiasm, endurance of hardship, and perseverance, added to skill with the camera and experience in wood-

¹ Wild Wings | Adventures of a Camera-Hunter among the larger | Wild Birds of North America on Sea and Land | By | Herbert Keightley Job | Author of "Among the Water-fowl," | Member of the American Ornithologists' Union, etc. | With an Introductory Letter | by Theodore Roosevelt | With one hundred and sixty illustrations after photographs from life | by the Author | Houghton Mifflin & Company | Boston and New York | The Riverside Press Cambridge—8vo, pp. xxviii + 342, 160 half-tone cuts and plates, illustrated titlepage. \$3.00 net. Published May, 1905.

craft, have enabled him to bring together a most wonderfully interesting and instructive series of pictures of wild birds in life, illustrating the nesting habits, poses, and manner of flight of a large number of species, some of which have not heretofore been so successfully and fully portrayed by the camera. The scenes visited include not only many portions of the Atlantic coast from the Florida Keys to Labrador, but many points in the interior. The accompanying text is always pertinent, and full of first-hand information, rendering the book of permanent value as a record of bird-life. The publishers have done their share in making the book attractive in its general make-up, and in the care evidently bestowed upon the reproduction and printing of the illustrations.—J. A. A.

Sharpe on the Birds of the Antarctic Regions.¹—Naturally the list of species here treated is not large, numbering only 25, and consists wholly of Water Birds, of which 3 are Penguins (Sphenisciformes), 17 are Procellariiformes, 4 are Lariformes, with a single species of Cormorant (Pelecaniformes). Nearly half of the text and nearly all of the text illustrations relate to the Adelia Penguin (*Pygoscelis adeliae*), of which there are two colored plates, representing the adult, the young, and the eggs. Under each species is given first its synonymy and other bibliographical references, with a list of the specimens brought home by the expedition, followed by appropriate biographical matter. Much of this is compiled from the reports of previous Antarctic expeditions, thus bringing together practically all that is known of the life-histories of the species treated. Many extracts are made from the private diary of the late Nicolai Hanson, the naturalist of the 'Southern Cross' Expedition, who died before the conclusion of the voyage.² The fourteen half-tone illustrations, from photographs of the Adelia Penguin rookeries, of the birds singly and in groups, in various attitudes and under diverse conditions, afford a most welcome contribution to the life-history of this exceedingly interesting species.—J. A. A.

Butterfield on Bird Migration.—In a recent paper entitled 'Remarks upon some theories in regard to the Migration of Birds,'³ Mr. J. Ruskin

¹ Report on the Collections of Natural History made in the Antarctic Regions during the Voyage of the "Southern Cross." 8vo, London, 1902. Published by order of the Trustees of the British Museum (Natural History). IV. Aves. By R. Bowdler Sharpe, L. L. D., F. R. S., etc. Pp. 106-173, pll. (col.) vii-x, and numerous half-tone illustrations.

² This diary, translated from the Norwegian language by his father, Anton Hanson, forms Part III (pp. 79-105) of the Report on the Collections of the 'Southern Cross,' and is a most valuable contribution to the natural history results of the Expedition.

³ Remarks upon some Theories in regard to the Migration of Birds. By W. Ruskin Butterfield. *Novitates Zoologicae*, Vol. XII, pp. 15-20, Jan., 1905.

Butterfield comments briefly, considering the breadth of the subject, on a few of the many theories respecting the origin, manner, and causes of the migration of birds. His criticisms are mainly destructive rather than constructive, and he offers us little in the way of a clear and sharp formula of even his own views on the several points discussed. His remarks are grouped under the subheadings (1) 'Incentives to Migration,' (2) 'Migration Routes,' (3) 'How do Birds find their Way?' and (4) 'Origin of Bird Migration.'

Taking the last topic first, the author seems to accept, in a general way, the hypothesis that "the changes of climate induced in the northern hemisphere by the decline of the Glacial Period as the ultimate cause of migration in this part of the globe"; although, under present conditions, "the migratory impulse tends to strengthen in some forms and to weaken in others." He cites the case of the varying degrees of migration presented by different forms of the Horned Larks; but almost any widely dispersed group of closely related birds offer equally pertinent illustrations of this rather obvious condition.

Under 'Incentives to Migration' he believes that too much stress has been laid upon "scarcity of food" as the impelling cause of the autumn migration, inasmuch as in species of wide latitudinal dispersion, the places of individuals that live in the middle districts are taken, for a time, later in the season, by individuals of the same species from further north. "While admitting," he says, "that want of sustenance may prompt the autumn migration in some cases, it may be doubted whether it is so important a factor as is generally supposed." He believes that the completion of the moult and (in adults) "the decline of the stimulus of reproduction" are also factors. The first is undoubtedly an important one in the case of certain groups of birds, as the Anserine series and some others, which suffer simultaneous loss of the wing-quills during moult and are thus for a time almost flightless, and it doubtless affects others less effectually crippled by the annual moult. It is also true that many migratory species of birds lead a less sedentary life after the close of the breeding season, and in many cases become wanderers, quite deserting their immediate breeding grounds, and in some cases even depart for more southern latitudes long before the decline in either temperature or (apparently) the food supply would necessitate such a movement. Yet, sooner or later, migration from these causes would become compulsory, and while under present conditions few migratory species wait for a crisis from such conditions before moving from their breeding stations, it is hardly to be doubted that far back in the history of bird migration they were the impelling factors. They may even still be accounted as the primary cause, and that for reasons not at present quite clear to us many species anticipate the ultimate necessity by a movement somewhat in advance of compulsory conditions, they being free to roam at large as soon as the restraining duties of reproduction are fully past.

Regarding the incentive to the spring migration, Mr. Butterfield hardly

makes his opinions clear. While apparently not discarding the idea that the spring movement is incited by the periodic activity of the reproductive organs, he seems hardly to adopt it; and cites the "demonstrations" of Cooke and Clarke of "the importance of temperature as a factor," only to say that "the remarkable uniformity of climatic conditions prevailing in the Tropics makes it clear that we must look elsewhere for an explanation of the departure of migratory species which winter in this zone."

That the incentive is primarily physiological seems more and more to be confirmed with the advance of our knowledge of the manner and conditions of the movement. That temperature is a powerful regulating factor as regards the rapidity of the journey after the birds are under way, the researches of Cooke and others may be considered as having unquestionably demonstrated. That warm and cold changes in the weather respectively accelerate or retard the northward bound birds in their spring journey is at least one fact in bird migration that is not open to question.

Respecting the impulse to migrate in spring, the following from a paper on the 'Origin of Bird Migration' by Mr. F. M. Chapman, published some ten years ago (*Auk*, XI, Jan. 1894, pp. 12-17), may well be recalled in this connection: "Many animals," he says, "have an instinctive desire for seclusion during the season of reproduction . . . Many species of tropical sea-birds resort each year to some rocky islet, situated perhaps in the heart of their habitat, where they may nest in safety. This is not migration in the true sense of the word, but nevertheless the object is the same as that which prompts the Plover to migrate to the Arctic regions, and, be it further noted, the movement is just as regular. These sea-birds pass their lives in the tropics, their presence or absence in any part of their range being largely dependent upon the food supply. But, as in the case of a Warbler which nests in Labrador, they are all affected at nearly the same time by an impulse which urges them to hasten to a certain place. This impulse is periodic and is common to all birds . . . It is evident, therefore, that external conditions have not created this impulse, though it is possible that in many instances they may have governed its periodicity. On the contrary, its causes are internal. In the case of the sea-birds, for example, dissection will show an enlargement of the sexual organs and it is this physiological change which warns the birds that the season of reproduction is at hand"

Under 'Migration Routes,' and 'How do Birds find their Way?' the author's remarks presents little that calls for comment, being for the most part a brief reference to more or less generally accepted views. He is inclined, however, to combat the idea that birds either follow, or are guided in their journeys by, physical features. He says: "Where physical features are followed, we may be sure it is not from the guidance they afford, but because they mark out convenient highways." This assertion appears to be based on what "the Swallow" does in England; from which he concludes: "In the great masses of land, the guidance afforded

by following rivers or mountain ranges would, as often as not, lead birds right out of their course." In the first place, the conditions furnished by a small island like England are far from those that characterize a large continent, like Europe-Asia or North America. In the second place, we are unable to recall where it has been alleged that birds follow, in their long migratory journeys, either mountain ranges or large streams. Our author says: "There is some indubitable evidence that migration at times proceeds at great heights." The claim is, so far as we are aware, that birds passing at these great heights are able to see the leading features of the landscape beneath them, and that, presuming birds to have memory, they may be thus guided by the principal physical features of the country over which they are passing, and thus follow or cross mountain ranges or river valleys or coast lines as their route may require.

Just how, or by what means, birds find their way our author fails to tell us, though he admits belief that "birds possess a sense of direction," for how else could Albatrosses and other pelagic birds find their way back, at the proper season, to their breeding stations; in other words, he says: "The faculty whereby they direct their flight back to their breeding stations, over hundreds [sometimes thousands] of miles of open water, is doubtless akin to that exhibited by savages and pigeons." There is doubtless a problem here man will strive long to fathom before reaching a wholly satisfactory solution, but the suggestion made by Mr. Austin H. Clark in the April (1905) issue of this Journal (Auk, XXII, pp. 134-140), that the prevailing winds of certain latitudes, especially the trade-winds, may be an important aid, particularly in the case of pelagic wanderers, seems at least worthy of serious consideration.—J. A. A.

Riley's 'Birds of the Bahama Islands.'¹—In this paper is given a carefully prepared summary of our present knowledge of the ornithology of the Bahama Islands, consisting of a list of the 204 species and subspecies known to occur there, and notes on their relative abundance and manner of occurrence, preceded by a résumé of ornithological explorations in the archipelago, and by eight pages on 'The Zoögeographical Position of the Bahama Islands.' The 44 endemic species are considered with reference to their derivation or origin. Of these 14 appear to have reached the islands from the eastern United States by way of Florida, and 17 from the Greater Antilles, chiefly by way of Cuba, leaving 13 of doubtful or fortuitous origin.—J. A. A.

¹ Birds of the Bahama Islands. By Joseph H. Riley, Aid, Division of Birds, U. S. National Museum. From 'The Bahama Islands,' pp. 347-368. Published by the Geographical Society of Baltimore, 1905, George Burbank Shattuck, Ph. D., editor.

Bangs and Zappey's 'Birds of the Isle of Pines.'—In the 'American Naturalist' for April, 1905,¹ Messrs. Outram Bangs and W. R. Zappey published an annotated list of the birds of the Isle of Pines, off the southwestern end of Cuba, based mainly on Mr. Zappey's collections and field notes made in the spring and early summer of 1904. Use has been made also of the specimens and field notes obtained on the island in July, 1900, by Messrs. William Palmer and J. H. Riley, and of the records previously published by Poey, Cory, and Gundlach. The list contains 120 species and subspecies, of which six are described as new, namely: (1) *Ardea repens* (closely related to *A. occidentalis*), (2) *Grus nesiotes*, (3) *Saurothera merlini decolor*, (4) *Prionotelus temnurus vescus*, (5) *Myadestes eizabeth retrusus*, (6) *Spindalis pretrei pinus*. Besides the notes on habits and distribution there is critical comment on a number of species. The list is thus a summary of our present knowledge of the birds of this now ornithologically fairly well known island, which lies about 60 miles south of Cuba, with an area about equal to that of the state of Rhode Island. The physical aspects of the island are quite fully described, and there are several photographic illustrations and a map.—J. A. A.

Bangs on New American Birds.—In a recent paper² Mr. Bangs has described seven new subspecies of American birds, as follows: (1) *Crypturus soui mustelinus*, from the mountains near Santa Marta, Colombia; (2) *Scardafella inca dialeucos*, from the Honduras-Nicaragua boundary, 180 miles from the Pacific coast; (3) *Claravis pretiosa livida*, from the Rio Cauca, Colombia; (4) *Geotrygon martinica digressa*, from Guadeloupe Island, W. I.; (5) *Dacnis cayana callaina*, from Divala, Chiriqui; (6) *Calospiza lavinia cara*, from Ceiba, Honduras; (7) *Phanicothraupis rubica confinis*, from Yaruca, Honduras. Attention is also called to the preoccupation of the names *Columba squamosa* Temm. & Knip, for which *Scardafella ridgwayi* should be substituted, and of *Columba cinerea* Temm. & Knip, for which *Claravis pretiosa* (Ferrari-Perez) should be adopted. In an earlier paper³ (not previously here noticed) Mr. Bangs has described two subspecies of Tropical American Flycatchers, namely, *Serphophaga cinerea cana*, from the Sierra Nevada de Santa Marta, Colombia, and *Todirostrum cinereum finitimum*, from San Juan Bautista, Tabasco, Mexico.—J. A. A.

Thayer and Bangs on the Birds of Gorgona Island, Colombia.—In

¹ Birds of the Isle of Pines. By Outram Bangs and W. R. Zappey. Amer. Nat., Vol. XXXIX, No. 460, April, 1905, pp. 179-215. (Published April 26, 1905.)

² Descriptions of Seven New Subspecies of American Birds. By Outram Bangs. Proc. Biol. Soc. Washington, Vol. XVIII, pp. 151-156, June 9, 1905.

³ Two New Subspecies of Tropical American Tyrant Birds, *Ibid.*, Vol. XVII, pp. 113, 114, May 18, 1904.

The Auk' for 1904 (XXI, p. 408) reference was made to an expedition, sent out early in 1904 by the Hon. John E. Thayer for the purpose of exploring some of the little known islands and other parts of Panama and northern South America, he employing therefor the well-known zoölogical collector, Mr. Wilmot W. Brown, Jr. In the present paper¹ we have the first of a series of papers giving the scientific results of the expedition of 1904. Gorgona Island—a heavily wooded, uninhabited islet, five miles long by half a mile wide, situated about twenty miles off Punta las Reyes, Colombia—proved somewhat disappointing, its fauna being poor in both birds and mammals. The rainy season is perennial, and the vegetation so extremely dense as to be almost impenetrable. The island is of volcanic origin, and forms three peaks, the highest and central one having an altitude of about 800 feet. Mr. Brown found birds so scarce that often the result of a whole day's shooting would not exceed ten specimens, and the dampness was so great that artificial heat was necessary to dry the specimens of both birds and mammals to secure their preservation. Mr. Brown remained on the island about two weeks—June 19 to July 2, 1904.

The present paper includes reports on the mammals (by Mr. Bangs—5 species, two of them new), the birds (by Thayer and Bangs), and the reptiles and amphibians (by Thomas Barbour—13 species, four new). Fifteen species of birds were obtained most of them in small series, of which five are characterized as new, namely, *Sula etesiaca* (somewhat intermediate between *S. brewsteri* and *S. leucogastra*), *Urubitinga subtilis*, *Thamnophilus gorgonæ* (near *T. navius* and *T. ambiguus*), *Cyanerpes gigas*, and *Cæreba gorgonæ*, the two latter apparently very distinct from their nearest allies.—J. A. A.

Nelson on the Names of Certain North American Birds, etc.—Mr. Nelson has recently described a new Whip-poor-will from Mexico (*Antrostomus notabilis*), based on specimens in the Sunnett collections in the American Museum of Natural History, from Victoria, Tamaulipas,² and has revised the names of several North American birds.³ The Booby, commonly known as *Sula sula*, is shown to be not the *Pelecanus sula* Linn. (1766), but should be called *Sula leucogastra* Boddaert (1783).

¹ The Vertebrata of Gorgona Island, Colombia. Bull. Mus. Comp. Zoölogy, Vol. XLVI, No. 5, pp. 87-102, June, 1905. Aves. By John E. Thayer and Outram Bangs, pp. 91-98. (Papers from the John E. Thayer Expedition of 1904, No. 1.)

² Description of a New Species of Whip-poor-will from Mexico. By E. W. Nelson. Proc. Biol. Soc. Washington, Vol. XVIII, pp. 111, 112, March 31, 1905.

³ Notes on the Names of certain North American Birds. *Ibid.*, pp. 121-126, April 28, 1905.

For the *Accipiter velox rufilatus* Ridgway (1888) an older name is found in *Nisus pacificus* Lesson (1845), based on specimens from the western coast of Mexico and California. As the western Sharp-shinned Hawk occurs at Acapulco "only as a winter visitor," Mr. Nelson decides that for this reason the California bird "may be taken as typical of this form." Possibly a recognizable Northwest Coast form of the Sharp-shinned Hawk may yet be found, with a limited and fairly well defined breeding range, but until this has been made out neither of these names — *pacificus* from California and *rufilatus*, based on Fort Bridger specimens — need to give the layman any anxiety. In all probability neither will be available for the hypothetical new form, being apparently pure synonyms of *velox*, which seems to range across the continent without any satisfactorily recognizable western form, Rocky Mountain, Great Basin, and most California specimens, when comparable as to season and age, being not appreciably different from the eastern bird.

The common Turkey Buzzard of North America is shown to be separable from the Turkey Buzzard of Mexico, the West Indies and tropical America generally, through its much larger size and slight color difference. These were noticed by Wied in 1839, and for this reason he proposed the name *septentrionalis* for the North American bird (type locality, New Harmony, Indiana), thus restricting the name *aura* Linn. to the smaller southern form. The North American Turkey Buzzard, as Mr. Nelson shows, must stand as *Cathartes aura septentrionalis* (Wied). The same point is made, apparently independently and almost simultaneously, by Mr. Bangs in his 'Birds of the Isle of Pines' (Amer. Nat., April, 1905, p. 190, published April 26).

Mr. Nelson further shows that the Red-eyed Cowbird was first described by Lesson in 1839 as *Tangavius involucratus*, which name must replace the now current but much later *Callothrux robustus*. According to Mr. Nelson the three Mexican forms of *Tangavius* are merely subspecies and not species, so that the full name of our bird becomes *Tangavius æneus involucratus* (Lesson). — J. A. A.

Schiøeler on the Greenland Mallard.¹ — On the basis of a comparison of a large series of specimens of the Mallard from Greenland with specimens from Denmark Mr. Schiøeler has separated the Greenland form as a subspecies under the name *Anas boschas spilogaster*. The Greenland form differs from true *boschas* in being larger, with a somewhat shorter bill, darker upperparts and much more heavily spotted underparts. A large number of specimens are described in detail (including tables of measurements), and three plates, from photographs, very clearly illustrate the color differences claimed. — J. A. A.

¹ Om dem grønlandske Stokand, *Anas boschas spilogaster*. Af E. Lehn Schiøeler. Viedensk. Meddel. fra den naturh. Foren. i Kbhvn., 1905, pp. 129-148, pll. ii-iv.

Shelley's 'Birds of Africa,' Vol. IV, Pt. II.¹—The second part of volume IV, completing the volume, follows very promptly Part I, noticed in the April number of this Journal (Auk, XXII, pp. 228, 229), concluding the family Ploceidæ and carrying the species from No. 523 to No. 646. The seven colored plates, by H. Grönwold, beautifully illustrate fourteen species. We are glad to see the good progress which now marks this great undertaking, the scope and character of which have been fully explained in our notices of the earlier parts. — J. A. A.

NOTES AND NEWS.

WALTER E. BRYANT, a Corresponding Fellow of the American Ornithologist's Union, died in San Francisco, Cal., May 21, 1905. A biographical notice of Mr. Bryant will appear in a later number of this Journal.

ADOLPHE BOUCARD, a well-known ornithological explorer and collector, and the author of many papers and works on birds and insects, died at the residence of his son, 24 Stanley Gardens, Hampstead, N. W., England, March 15, 1905, at the age of 66 years. He was born in France in 1839, but passed the later years of his life at his villa near Ryde, in the Isle of Wight. He collected extensively in the different countries of Central America and in southern Mexico, where he lived for many years. There are probably few large museums which do not contain many examples of his beautifully prepared bird-skins. His ornithological publications comprise 'Catalogus Avium hucusque descriptarum' (1876), 'Genera of Hummingbirds' (1893-95), and various papers in 'The Ibis,' the 'Proceedings' of the Zoölogical Society of London, and elsewhere. In 1891 he began the publication of an ornithological journal called 'The Hummingbird,' of which five volumes were completed. The greater part of his large collection of birds, numbering about 25,000 specimens and including many types, was presented to the Musée d'Histoire Naturelle, of Paris, in 1895.

¹ The | Birds of Africa, | comprising all the species which occur | in the | Ethiopian Region. | By | G. E. Shelley, F. Z. S., F. R. G. S., &c. | (Late Grenadier Guards), | Author of "A Handbook to the Birds of Egypt," | "A Monograph of the Sun-Birds," etc. | — | Vol. IV. | Part II. | — | London : | Published for the Author by | R. H. Porter, 7, Princes Street, Cavendish Square, W. | 1905. — Roy. 8vo, pp. vi + 289-511, pll. col. xxxvi-xlii. Price 31s. 6d. net.

THE FOURTH INTERNATIONAL ORNITHOLOGICAL CONGRESS was held in London, June 12-17, 1905, under the presidency of Dr. R. Bowdler Sharpe of the British Museum (Natural History). The Congress opened with an informal reception at the Imperial Institute on the evening of Monday, June 12, followed by daily sessions on Tuesday, Wednesday, Friday, and Saturday. Thursday was given over to an excursion to Tring, where the members of the Congress were guests of the Hon. Walter Rothschild. On Friday afternoon the members were tendered a reception by the Right Hon. the Lord Mayor of London at the Mansion House, and in the evening were given a dinner by the British Ornithologists' Union. On the evening of Wednesday a *conversazione* was held at the Natural History Museum. After the adjournment of the Congress excursions were made on Monday, June 19, to the Duke of Bedford's Park at Woburn; on Tuesday to Cambridge, where Professor Newton welcomed the members of the Congress, and luncheon was served at Magdalene College; on Wednesday an expedition was made to Flamborough Head in Yorkshire, the breeding place of many sea birds.

The Congress was marked by a large attendance of members, and the presentation of many noteworthy papers, and altogether was an occasion long to be remembered by those participating in its proceedings, and especially by the visiting member for the bountiful hospitality extended to them. In addition to the general meetings, the Congress was organized into sections, as follows: (1) Systematic Ornithology, Geographical Distribution, Anatomy and Palæontology; (2) Migration; (3) Biology, Nidification, Oölogy; (4) Economic Ornithology and Bird Protection; (5) Aviculture. It is impracticable at the date of this writing to give any account of the papers presented, which we hope to do in a later issue of this journal. Among the members of the A. O. U. present were the Misses Florence and Maria R. Audubon, Frank M. Chapman, Dr. J. Dwight, Jr., James H. Fleming, and Dr. L. Stejneger. Papers were presented by Chapman, Dwight, and Fleming.

MR. ROBERT RIDGWAY has recently returned from a six months' collecting trip to Costa Rica, made in the interests of the U. S. National Museum. The objects of his visit were to secure material for use in the preparation of his 'Birds of North and Middle America'; to familiarize himself with the topographic and climatic conditions of that ornithological paradise, and with the birds in life; and to study the birds in the rich collection of the Museo Nacional, at San José.

With San José as his headquarters, and as the guest of the well-known Costa Rican ornithologist, Mr. Zeledon, he was enabled to reach several of the more interesting localities, such as Turrucare, Santo Domingo, and Pigres on the Pacific side of the country, Monte Redondo on the south side of the Candelaria range, Turrialba, Bonilda, and Coliblanco on the Atlantic slope, and the volcanos of Poás, Irazú, and Turrialba of the Central Cordillera. On these several expeditions he was accompanied

by his friends, Messrs. Alfaro and Zeledon, to whose ready assistance and knowledge of the country much of the success of his trip was due.

In the vicinity of Pigres, at the entrance of the Gulf of Nicoya, the party made the acquaintance of *Arinia boucardi*, a hummingbird known only from the original pair, collected in 1876, by the late M. Boucard. At Bonilda they found the rare cuckoo, *Neomorphus salvini*, and such desirable tanagers as *Calospiza florida* and *C. guttata*; while on the Volcano of Turrialba specimens of *Empidonax atriceps*, *Contopus ochraceus* and two new species of *Chlorospingus* were secured.

Knowing so well the Costa Rican material contained in the National Museum, Mr. Ridgway was enabled to direct his attention to filling gaps in the collection, and, although nearly three months elapsed before the arrival of his outfit, he succeeded in bringing back over 1300 very desirable specimens, representing many important desiderata. A number of species interesting from an anatomical view point were preserved in alcohol.

MAJOR EDGAR A. MEARNs, Medical Corps, U. S. Army, who has been in this country for a number of months on sick leave, is about to return to his post of duty in the Philippines, and will doubtless be able to resume, as circumstances may favor, his important natural history explorations begun during his former official sojourn of nearly two years in these islands. These resulted in his discovery of several new genera, and many new species and subspecies, of both birds and mammals, which he has been able promptly to publish during his enforced leave of absence in the United States.

Messrs. E. W. Nelson and E. A. Goldman are devoting the present season to a careful reconnaissance of the peninsula of Lower California and its islands, especially those in the Gulf of California.

Dr. Merriam, Chief of the Biological Survey (now raised from a Division to the rank of a Bureau of the Department of Agriculture), is continuing his survey of California, and Mr. and Mrs. Vernon Bailey are continuing their work in New Mexico.

THE ONE hundred and twenty-fifth anniversary of the birth of John James Audubon was commemorated by appropriate exercises in the Church of the Intercession, Broadway and 158th Street, New York City, on the evening of May 4, 1905. Addresses were made by the Hon. Alton B. Parker, Mr. Richard Watson Gilder, Mr. Frank M. Chapman, Mr. Ernest Thompson Seton, and others, with an original poem by Mr. Edward Doyle. At the American Museum of Natural History a large collection of Auduboniana was placed on temporary exhibition in honor of the occasion, including the portfolio used by Audubon in soliciting subscriptions to his great work, many of his original drawings, his hunting coat, gun, and other mementoes of his early wanderings in Labrador and the Far West.

A 'SUPPLEMENT' to the 'Birds of New Zealand' is announced, to form two quarto volumes, with twelve hand-colored plates (by Keulemans) and numerous text illustrations. The subscription price is three guineas per volume, and the edition will be limited to 500 copies. During the seventeen years that have passed since the publication of the second edition, quite a number of species have been added to the bird fauna of New Zealand, and much new information respecting those previously known, and in place of issuing a third edition the author, Sir Walter L. Buller, has decided to issue two supplemental volumes, in the same style as the original work. Subscriptions are to be addressed: "To the Publisher of the Supplement to the 'Birds of New Zealand,' 62 London Wall, London, E. C."

WE HAVE received also the prospectus of a work entitled 'The Eggs of European Birds,' by the Rev. Francis C. R. Jourdain, to be published in ten parts, octavo size, each to contain twelve or more colored plates. The price is 10 shillings per part, and subscriptions may be sent to the Author, Clifton Vicarage, Ashburne, Derbyshire, or to Mr. R. H. Porter, 7 Princes St., Cavendish Square, London, W.

A NEW natural history journal is 'The Ontario Natural Science Bulletin: Journal of the Wellington Field Naturalists' Club,' of Guelph, Ontario, Canada, an annual, of which No. 1 was published April 16, 1905. It is an octavo of 48 pages, of which pages 1-24, 38-41, and 43-45 are ornithological, the remaining portions dealing with mammals and botany. The editor is Mr. A. B. Klugh, Guelph, Ont., and the price is 25 cents. The bird papers are: 'The Birds of Wellington County, Ontario,' by A. B. Klugh (pp. 1-10, 197 species); 'An Unusual Migration of the Canada Jay,' by J. H. Fleming; 'The Origin of the Kirtland's Warbler,' by P. A. Taverner; 'The Thrushes of Eastern Ontario,' by C. J. Young; 'Migration Report, Guelph, Ontario, March 1, 1904-March 1, 1905,' pp. 21-24 (tabular, and anonymous). There are several pages each of ornithological 'Notes,' and of brief reviews of ornithological publications.

THE annual meeting of the Michigan Ornithological Club was held in the University of Michigan Museum at Ann Arbor on April 1, 1905, at which the following papers were read: 'Recent Advances in Ornithology,' Walter B. Barrows; 'In Memoriam—Albert Bowen Durfee,' Leon J. Cole; 'Birds Noted en route to Northern Michigan,' Norman A. Wood; 'Ecological Distribution of the Birds of the Porcupine Mountains, Michigan,' Otto McCreary; 'Observations on the Nesting Habits of a Pair of House Wrens,' Max M. Peet; 'On the Use in Surgery of Tendons of the Ardeidae and Gruidae,' Alex. W. Blain, Jr.; 'Some New and Rare Records for Michigan,' Norman A. Wood; 'A List of Birds from the Michigan Forest Reserve, Crawford County,' Earl H. Frothingham; 'The

Occurrence of Bewick's Wren at Grand Rapids,' Leon J. Cole; 'A Preliminary Notice of an Interesting Migration Route,' P. A. Taverner.

The following officers were elected for 1905-06: President, Walter B. Barrows; Vice-Presidents, A. H. Griffith, James B. Purdy, and J. Claire Wood; Secretary, Alex. W. Blain, Jr.; Treasurer, Frederick C. Hubel. Editorial Staff of the 'Bulletin': Walter B. Barrows, Editor; P. A. Taverner and Norman A. Wood, Associates.

THE American Ornithologists' Union Committee on the Classification and Nomenclature of North American Birds held a four days' session in April last at the U. S. National Museum in Washington, with all the members present except Mr. Ridgway, who was in Costa Rica. Final action was taken on about one hundred cases, thus disposing of the greater part of those listed for consideration. A number of others were considered, but final action on them was deferred, owing to lack of material or unexpected complications in questions of nomenclature. These were all assigned to subcommittees, to be reported upon at the next meeting of the Committee. As the greater part of the cases acted upon had previously been considered by subcommittees, they were more readily decided than would have been otherwise possible.

At the conclusion of the session the Committee decided not to issue a report of its decisions in the form of a Supplement to the Check-List, as has been heretofore customary, in view of the fact that a new edition of the Check-List is under consideration for publication in 1906.